

CLINICAL MEDICINE AND SURGERY

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EDITORIAL

Ramón y Cajal Spain's Master Histologist

IN 1852, the wife of a physician in an isolated mountain village in the former kingdom of Aragon, in Spain, gave birth to a son who, in spite (or, perhaps, because) of his lack of early promise, was to achieve world-wide fame. This boy was Santiago Ramón y Cajal.

With a commendable, but not very intelligent, zeal for his own profession, his father tried his best to force his son to follow in his footsteps, but the boy had no talent for nor interest in medicine as a career, preferring to spend his time in drawing or painting and reading stories. He was considered dull by his teachers and was twice taken out of school, to be apprenticed, first, to a barber, and then to a cobbler; but he did not get on with these trades either.

His persistent father at last made a final effort to start young Santiago on a medical career by introducing him to the study of osteology; and here his artistic tendencies asserted themselves and he began to make drawings of bones from every possible angle, and presently became an expert anatomist.

In 1873, without much enthusiasm or evidence of brilliance, he received his medical degree from the University of Zaragoza (where his father was then professor of anatomy), and shortly thereafter obtained a commission in the medical corps of the Spanish army and sailed for military service in Cuba. There he contracted malaria and

dysentery and was so ill that he resigned in 1875 and returned home.

By 1877 his health was sufficiently restored so that he accepted a position as assistant demonstrator of anatomy at the University of Zaragoza. About this time he first saw a microscope, which aroused his immense enthusiasm.

But in 1878 he developed pulmonary tuberculosis, and devoted the next year or two to getting it under control.

In 1884 he accepted the chair of anatomy at Valencia, and the next year did important original work by studying the etiology of an epidemic of cholera, which studies resulted in his receiving a fine microscope as a gift. With this as a nucleus, he fitted up a small laboratory in his home, where he supplemented his meager salary by coaching graduate students in histology and anatomy. During this period he heard of Golgi's chromic silver stain, improved it, and applied it to the entire nervous system.

His serious study of the histology of the nervous system began in 1887, with his appointment as a professor at Barcelona, where he began to publish his microscopic studies, at home and abroad. This soon brought him scientific fame, and he was invited to present his methods in Germany, where he convinced the great Kölliker of their soundness.

In 1892 he became a professor at the University of Madrid, where he produced his first great work, "*Textura del Sistema Ner-*

vioso" (1897-1904), which included his discoveries in connection with the optic chiasm, the olfactory lobes, the medula, cerebellum, cerebral nerves, spinal ganglia and the innervation of the retina.

This work brought him well-merited recognition, a long list of prizes, including the Nobel prize (with Golgi, in 1906), and many scientific honors and honorary degrees. He was called to lecture in England and in the United States. He was offered the position of minister of public instruction, but declined it.

In 1913-14 he published his masterly work on degeneration and regeneration of the structures of the nervous system; and in 1920 the Cajal Institute was founded in his honor, and still carries on the work which he laid down when death called him on October 18, 1934, at the ripe age of 83 years, full of wisdom and honors.

It is a comfort to think that this great Spanish scientist and research worker, who laid the foundation for our present knowledge of the microscopic structure of the nervous system, was recognized for the genius he was during his lifetime. The ugly duckling knew that, at the last, he was accepted by the scientific world as being a glorious swan. His memberships in learned societies and his fame circled the globe.

By a few, he is equally appreciated as a philosopher, his collection of aphorisms and anecdotes, "*Chácharas de Café*," containing many bits which, while tinged with Latin pessimism, are still delightful. His passing took from among us a powerful and noble mind and a distinguished personality.

The highest happiness almost always coincides with forgetfulness of ourselves and of others. This beatific alienation of frivolous or disagreeable things is attained when we ask our servant: "Have I eaten?"—an unequivocal criterion of vocation.—RAMÓN Y CAJAL, in "*Chácharas de Café*."

The Army and Navy

NOW that the world is rumbling with stories and rumors of armed conflict, the Army and Navy are receiving a good deal more attention than has been given to them since the World War—and rightly so, as they constitute the most reliable prophylactic against the fever of battle and the first-aid treatment for it in case we should be attacked by that dreadful disease—which heaven forefend!

If, however, we think of these organizations

merely as groups of fighting men and the engines they employ, and of the money and time spent upon them as sheer waste, our thinking is superficial and unsound. The training required and given in these great agencies of national defense is, first, a training in self and group discipline, which was never needed more, especially in our own country, than it is now; but that is by no means the whole story.

The Department of Military Science and Tactics, of Princeton University, recently sent out to all of the more recent graduates from that department a question like this: "Patriotic considerations aside, is the four-year course in military science of sufficient value to the individual to warrant its continuation?"

Of the answers received, 96.4 percent were in the affirmative, and the consensus might be stated thus: "Military science gives a balance between the cultural, intellectual and practical elements in education. The breadth of the field covered is educationally broadening and the independent thought required in the rapid solution of military problems sharpens the intellect and breeds self-reliance. The training in command, cooperative effort and the principles of organization are educationally valuable. It is an essential part of one's education to know how to take orders and to give them coherently and concisely." All these things are true of the Navy as well as the Army training.

And then there is the economic side. Our great "army of the unemployed" is one of our most pressing national problems. If a few hundred thousand of the more vital (and therefore more unruly and "difficult") of them could be placed under the type of training just discussed, the ultimate value to the nation of such training would extend far beyond the actual trainees. Moreover, the building of a thousand or so tanks and airplanes and other engines of war would give employment to thousands of men, not only in their actual fabrication, but also in the production of the various raw materials which enter into their construction—and this without increasing the danger of war.

When a battleship is built, 80 percent of the large sum expended goes to labor. Would that not be a more sane and sound way of spending several million dollars than in paying men to count the squirrels in a forest preserve or for wrecking a perfectly good pavement in order to build a new one?

The Army and the Navy teach men to stand on their own feet and to do things with their hands, and such knowledge is badly needed at this juncture.

What do all these things mean to physicians?

First, these Services offer an exhilarating, varied and assured living to hundreds of the younger and more active ones, who are now eking out a bare existence in civil practice.

Second, the older ones have sons who are now or will soon be clamoring for a chance to do their share of the nation's work. Under present conditions, the professions are crowded, and the schools that prepare for them even more so. It is, of course, too bad to make a plumber out of one who should have been a physician; but it is a calamity to make a physician out of one who should have been a plumber.

Within reasonable limits, the more the Army and Navy are expanded and brought up to full efficiency, the more openings there will be for young and sturdy doctors and for the sons of the older ones, and the more jobs there will be for workers in many lines. Incidentally, the more adequate our defenses, by land and by sea, the less is the probability that we shall be attacked by some ambitious or desperate nation.

Better think this out rather fully, and then write your Congressmen.

The first destroyer of the liberties of a people was he who first gave them bounties and largesses.—
PLUTARCH.

Ownership and Possession

ALTHOUGH the words ownership and possession are often used as synonyms, such use is erroneous. It is quite possible to own a thing without possessing it, and to possess without ownership. A man may own several houses, for instance, but he possesses only the one in which he lives; in fact, if he leases one of his houses, the tenant is the one who actually possesses it.

We own only what we are financially able to buy, but we can possess anything which we are able to understand, appreciate, use and enjoy. No one can own a gorgeous sunset, but any one with a soul attuned to beauty can possess it. The man who never bought a painting in his life can possess all the treasures in all the art galleries within his reach—if he is that kind of a man.

This idea applies with especial force to

books and magazines, for ideas belong to any and all who can assimilate and employ them. We know a man who *owns* one of the largest and most valuable private libraries in the United States, but who, except for a reasonably intimate knowledge regarding the price of each volume and a superficial bibliophile's knowledge of the reasons why they will fetch such prices, he *possesses* none or very few of them. The poorest fellow with the heart of a literateur and a public library at his disposal is richer than this millionaire, for he can possess every volume in it that he is able to read with understanding.

Whose are the books in your medical library? You own them, of course, but perhaps your assistant, nurse or technician has a larger possessive interest in them than you have. Books on a shelf do not imply knowledge. They become parts of one's permanent assets only when and as one reads and studies them. "Art (including the art of medicine) is long, and time is fleeting." Just what is your status in the healing art? The opportunities for gaining knowledge by the oral and practical instruction of teachers are rare and expensive, but books are relatively cheap and are always there, whenever one has a few spare moments.

Whose are the medical journals that the postman brings to your office, and what becomes of them? They contain the weekly or monthly records of the researches and experience of others who are working along your line, and if you make it a point to *possess*, as well as own them, they will add, not merely to your knowledge (which is power and satisfaction and peace), but also to your earning ability and professional standing. If saved and bound, at the end of the year, with their indexes, they will, (if they are of any real use in the first place) make valuable, permanent reference books. Of course, some of the so-called magazines you receive "without money and without price" naturally go into the trash can, but if you toss the *real* ones into the waste basket, you are throwing away money.

This whole idea, in all its connotations, is worthy of some genuine consideration, and those who are looking for a juicy mouthful to exercise their intellectual masticatory and digestive apparatus upon, will find this a portion from which a good deal of assimilable nutriment can be extracted.

Accumulated facts are knowledge: coordinated facts are science.—DR. FRANK T. WOODBURY.

Sex and Psychoneuroses

WHILE most of those who are not adherents of the religion known as freudianism have the distinct impression that the founder and prophet of that religion is hipped on the subject of sex and that most of his dream interpretations are nothing less than fantastic, the fact remains that sex desire is one of the basic human appetites (but not the only one) and that its frustration or misdirection, while not often fatal, is still the cause of many functional disorders which may cause more human suffering than that produced by actual organic disease.

That collection of almost ubiquitous maladies, somewhat vaguely classed as neuroses and psychoneuroses, is not due, at least in the vast majority of cases, to any physical condition whatsoever, but to an inefficient use of a sound but immensely complex mind-body mechanism, resulting in maladjustment to the environment and consequent frustration, of one sort or another, and giving rise to a vast variety of symptoms, many of which mimic those of organic disease so closely as to deceive all but the most acute and well informed observers.

Because, even in these free-spoken days, the true inwardness of sex disturbances is not discussed with the ease, directness and intelligence employed in the consideration of our other functions, sexual disorders and maladjustments are still very commonly overlooked by the general run of physicians, and this results in many lamentable failures in the management of cases which could be

handled successfully if we had a little more imagination and insight.

Few women are actual nymphomaniacs; but, on the other hand, too few husbands are sufficiently trained in erotic technics or have sufficient self-control to make it certain that they are giving their perfectly normal wives the satisfaction that they require, even if they are not conscious of that need—as they frequently are.

By no means all cases of psychoneurosis rest on a sexual basis; but enough of them are so founded to make it necessary for every physician who aspires to high success in his profession to familiarize himself with the psychologic and psychopathologic facts which underlie this enormously important human relationship, so as to discover such conditions when they are present, and with the principles of erotology, so as to be able to deal with them adequately when they are found.

Because most doctors are men, and most women do not talk

freely about their sex lives to members of the other sex, it comes about that the proportion of women among the psychoneurotics is high, and the proportion of those cases having a sexual basis is even higher.

The man or woman who considers the exercise of the sex function as sinful, debasing or vulgar, *per se*, has no rightful place in the medical profession, because such a one will never develop the sympathetic understanding which is absolutely essential in the successful management of some of the most distressing conditions which afflict mankind.

NEXT MONTH

Dr. Paul Levi, of Gowanda, N. Y., will set forth the present status of the ambulant or injection treatment of hernia.

Dr. Ellis Powell, of West Monroe, La., will describe, in detail, how a general clinician can make blood-sugar tests in his office with a simple and inexpensive apparatus.

Dr. William H. Guillum, of Asbury Park, N. Y., will explain the ways in which physical therapy can be used in office practice.

COMING SOON

"Clinical Observations on the use of Suprarenal Concentrate." By C. S. Bucher, M.D., Champaign, Ill.

"Juvenile Crime and Delinquency." By W. A. Neuman Dorland, M.D., F.A.C. S., Chicago, Ill.

LEADING ARTICLES

Hungry Brains

Hyperinsulinism and Psychic Disorders

By Ellis Powell, M.D., West Monroe, La.

IN practice we frequently see patients with brains that are literally hungry, and occasionally one that is starving.¹ This may appear to be an unorthodox statement, as we generally suppose that the brain, being the master tissue of the body and working in a mysterious way, is magically supplied with food in some occult manner, or that it is a self-sustaining unit, capable of caring for its own needs independent of all else.

This is a wrong idea, as the brain is subject to the same physical and chemical laws that all the other organs and tissues of the body and all other working or growing things, whether vegetable, animal or mechanical, must obey. A plant or an animal has to be properly nourished in order to grow and develop. So does the brain. If a plant or animal is sufficiently deprived of its food, it will become hungry, even unto starvation. So will the brain. In fact, any work-producing mechanism requires fuel—a source of energy. The brain does work and, of necessity, it also requires a source of energy.

The source of energy from which the brain receives its ability to grow and to develop, to think and to reason, to perform its most highly specialized duties, is the blood sugar.² Nature has provided an unfailing supply of sugar, by making it possible for the body to convert carbohydrates, proteins and even fats, if the occasion demands, into sugar and, in addition, has provided for the storage of a reserve supply of glycogen (sugar) in the liver, to be available when the need arises. Nature has taken these elaborate precautions in order to have the food supply of the brain constantly available to use for growth and development and as a source of energy.

But how can one determine whether the normal supply of food or fuel is available? Since the brain uses the blood sugar exclusively as its source of energy, a study of the sugar concentrations in the blood would be indicated and, as a routine measure, the so-called glucose tolerance curve is resorted to.

This consists of a test, made while fasting (before breakfast), after which the patient is given 100 Gm. of glucose (dextrose) orally and blood sugar tests are made hourly for six hours thereafter. The low-normal, high-normal and normal sugar concentrations at the various hours may be visualized from Fig. 1, and those whose curves are within these limits have a normal supply.

Hungry brains are those whose owners have abnormally low sugar levels. The blood sugar level of a patient whose brain was starving (you may prefer to call it chronic hypoglycemia or hyperinsulinism³), is shown in Fig. 1 (X) for comparison. Note that the fasting sugar level was slightly above 50 mg.; 1 hour after breakfast, 80 mg.; 2 and 3 hours after, 70; 4 hours after, 65; 5 and 6 hours after, 55; all expressed as milligrams per 100 cc. Thus at all times the brain was decidedly short of food and fuel for normal work. Practically the same sugar concentrations were found after every meal, so it follows that, for 24 hours each day, she was in either a mild or a severe hypoglycemic state and, since this condition had been existing for months, it is logical to think that her brain was literally starving and clearly was unable to do its normal work.

In this instance I regret that I am unable to state the correct psychiatric diagnosis, but, briefly, the mental condition of the patient under discussion was like this:

Case Report

A married female, age 42, with 2 normal children and negative antecedents, twelve years ago was confined to a state institution for 3½ years, with a mental disturbance similar to the present one. She was of the "dumb, depressed type," preferring solitude and darkness and remaining largely in bed, arising therefrom only to walk off absent mindedly, "to get away from her tortures." Her tortures of mind, soul and body were, she believed, a result of her evil ways of living, God had turned her over to the devil, and there was no hope—nothing but to live

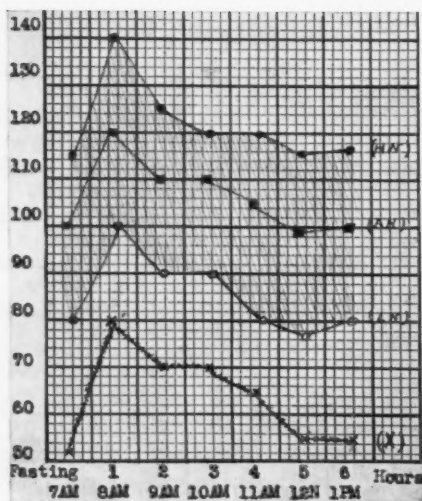


Fig. 1.—The blood-sugar curve of Mrs. X (X); high normal (HN), average normal (AN) and low normal (LN) blood-sugar curves are given for comparison. All sugar estimations are expressed in milligrams per 100 cc. of blood.

in torment, as did Dives. Such thoughts dominated her mind and caused marked apathy toward her children and toward her personal comforts and necessities. Suicidal thoughts were abandoned as impossible, since that would defeat God's plan for her life of torture and He would prevent poison from having its effect. She was able to sleep only one or two hours a night and was unresponsive to sedative drug therapy. It should be mentioned at this point that a hungry body does not sleep very well and that a hungry baby will awaken and give the alarm: perhaps a hungry brain will, also.

Upon assuming charge of this case, several sugar determinations were made, using the routine food supply rather than the orthodox dextrose tolerance test, and the fact was definitely established that the sugar concentrations were as shown in (X) Fig. 1. It appeared logical, to me at least, that if this brain had a normal food supply it would redevelop and work better, not overnight, by any means, but as soon as Nature could correct the condition of malnutrition that existed in this woman's brain.

She was accordingly placed on a low-carbohydrate, high-fat diet with frequent feeding, for reasons that have previously been explained by various students.⁴ The result was the gradual restoration of the blood sugar to constantly normal quantities, as shown in Fig. 2, "the road back" from mental darkness to mental light—the road that returned her to herself, to her home and to her children.

In studying these lines and curves, permit me to emphasize the fact that they represent so many grams of available food for the brain's nourishment and for the brain's work;

that they show whether the brain is nourished or malnourished—if the mental lamp has a fuel supply sufficient for mental brightness or perhaps only sufficient for mental dimness or even darkness, which generally occurs in the form of coma or convulsions, when the fuel level descends to from 40 to 50 mg. per 100 cc. of blood.

It is well to remember that all cases are not so chronically or severely malnourished—so thoroughly starved—as was this patient. The degree of malnutrition will, of course, depend on the degree of the food shortage and the duration thereof. In other words, blood-sugar levels that are around 70 mg. for a few days will not cause so much disturbance as readings of from 50 to 60 mg. existing for months. Some cases show only a mild hunger; others a severe hunger, lasting from a few moments to several hours. The condition is comparable to that of the body proper: there are those who are literally starving, malnutrition to the last degree being evident;

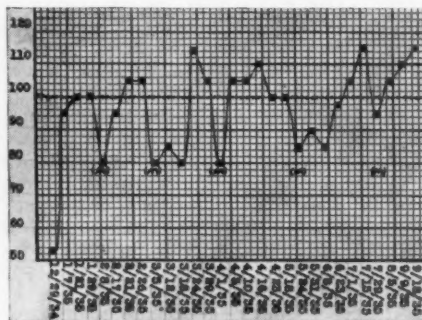


Fig. 2.—The "road back" of Mrs. X, representing fasting blood-sugar levels, expressed in mg. per 100 cc. of blood. (M) refers to menstrual periods.

and there are those who are merely hungry and are promptly relieved by food.

Symptoms

These individuals are normal physically and mentally and show normal fasting blood-sugar levels, curves, etc., and all goes serenely along until suddenly there is "a weak, trembly spell of exhaustion"; or a "running away of the heart, with a feeling of impending death"; or a "nervous attack with loss of concentration sufficient to stop dictating, reading or whatever I am doing, and always relieved by candy"; or "attacks of temporary mental lapses"; or "unexplained fainting attacks"; or "marked emotional instability"; etc.

The symptom complexes are multitudinous⁵ and frequently we refer to these patients as "nervous," "nutty" or "goofy," and advise them: "Get control of yourself," or "Go away for a rest." Frequently these episodes are the manifestations of a brain that is acutely hungry—that is sufficiently short of its fuel

to impair its work output and, if one will do a blood-sugar test during the attack, one will be surprised to find many of these patients whose sugar levels have suddenly dropped to 70 or 60 or mayhap 50 mg. per 100 cc. of blood, and who will be restored to normal far quicker by a chocolate-milk or other quickly assimilable carbohydrate than by bromides, luminal, etc.

In treating these cases and observing the mental function at various fuel levels, I am constantly reminded that the expression, "the mental lamp," is very appropriate and descriptive and, when compared with an ordinary lamp, we can better understand the varied symptoms and their origin.

If a 100 candlepower lamp receives its normal fuel supply it will give forth normal brightness or light sufficient to dispel the darkness. If we reduce the fuel supply, we reduce the brightness; if sufficiently reduced, dimness and shadows appear; and, if further reduced, brightness and even dimness will disappear and darkness, accompanied by the ghosts and "haunts" that are said to dwell therein, will appear. If we restore the fuel supply of the lamp to normal, we will observe that darkness, even dimness, has disappeared and brightness once more exists.

So it is with the mental lamp. The brain was designed to be normally bright on 100 units of fuel (i. e., 100 mg. of blood sugar), and if the fuel is progressively reduced, mental brightness is likewise progressively reduced until eventually it begins to disappear, dimness and the shadows approach, and finally darkness, in the form of coma or convulsions, appears at 40 to 50 mg. In other words, if the fuel of the brain is curtailed, its most highly specialized functions will be the first to become impaired—there will first be an impairment in reason, judgment, memory, concentration or the so-called higher intellectual faculties. The scantier the fuel becomes, the more impaired the function becomes, until reason, judgment, etc. are markedly defective or absent. In the meantime, as the higher mental faculties decline, mental brightness becomes less and the shadows, such as maladjustments, repressions, etc., from the subconscious, dominate the impaired higher mental faculties more and more. If the fuel supply is sufficiently reduced, eventually the emanations from the dark (the subconscious) will become completely dominant and, be it remembered, they cannot be dispelled by the "cold light of reason," because reason, being a higher mental function, was among the first to become impaired or probably to disappear.

And as I see it, the only way to conquer these "ghosts and haunts" from the graveyard of the conscious mind (the subconscious) is to return the nutrition of the brain to nor-

mal—to restore to normal the fuel supply of the mental lamp and, as the lamp is refueled, it will give forth more light and eventually normal reason and judgment will be restored and the emanations from the dark will be returned to the subconscious from whence they came and will be held captive therein by a normal conscious mind.

Psychic Disorders

It is absurd to prescribe drugs or rest cures or psychoanalysis or mental suggestion or mental re-education or whatnot for these hungry brains. Remember that a hungry body will cause one to steal food, if necessary, but a hungry brain cannot steal. If we will spend less time in differentiating between a low-grade mentally backward patient and a high-grade moron, or between cases of dementia praecox of the catatonic or hebephrenic type, and devote more time to the study of the nutritional needs of the brains of our patients, we will probably do our patients far more good. We must not deceive ourselves into believing that we do not see these cases. They are in our practices daily, but we do not recognize them. Remember that the symptoms are multitudinous; in fact they run the gamut of psychiatry, from coma to convulsions and from mental deficiency to mental degeneration.

In this discussion we are considering only those patients in whom the food supply of the brain is not available in the blood stream, but we must not forget that there are conditions that prevent it from being delivered to the cortex of the brain, such as cerebral syphilis, with its obliterative endarteritis of the cortical vessels, fractures, tumors, thrombi and arterioscleroses. In these conditions also we find that the nutrition and function of the brain are disturbed, and it becomes evident that the blood sugar must be delivered to the cortex of the brain for normal mental function to be possible.

To the average doctor, psychiatry is written in "an unknown tongue," but those who venture to "read up on it a little" find that two well-known hypotheses have been offered in explanation of the causes of mental disorders: The Freudian school of psychiatrists believes the pan-sexual dogma, which boldly attributes all neuroses to the repression of a memory of some sexual desire or sexual incident; while the followers of Adler ascribe all mental disorders to self-preservation.⁶ We well know that the "opposite sex" has caused many people (and perhaps a few doctors) to go crazy, but probably more believable to the doctor is the fact that self-preservation, under the present conditions, is a very satisfactory explanation of mental disorders. But be these two theories as they may, we will also learn⁷ that "the absence of any demonstrable anatomic abnormality is characteristic of the neu-

roses; nevertheless, disease, or disordered function, is impossible without some underlying physical basis." If the mental lamp shows no "demonstrable anatomical abnormality" in the neuroses and psychoneuroses, should we not at least suspect that the "underlying physical basis" may be an impairment in the fuel supply—in the blood sugar?

Etiology

Our primary concern is with victims of low blood sugar, and it has been estimated that⁸ "one-sixth of the total population tends to have a low percentage of sugar in the blood," and for this reason alone it should be of concern to all physicians. This condition was first observed and described by Seale Harris,⁹ in 1924, as hyperinsulinism, or too much insulin in the blood. Too much insulin burns up too much sugar and leaves too little sugar for normal mental function. And the thing that produces too much insulin is an overactive pancreas which, in turn, is caused by tumors of the pancreas, deficient activity of the antagonistic endocrines or repeated dietary errors.

Unquestionably dietary errors play the greatest part in the production of this condition, as the well known "sweet tooth" of the American people has produced what students of nutrition refer to as "sugar-saturated, vitamin-starved America." When we reflect over the fact¹⁰ that each individual in America consumes 115 pounds of sugar annually and is constantly indulging in candy, ice cream, cakes, pies, preserves, jellies, soda-pops, honey, syrup and other concentrated carbohydrates, is there any wonder that the pancreas does eventually become overactive, and producing too much insulin, causes one-sixth of the population to have a tendency to low blood-sugar levels? This condition has, no doubt, played a great part in placing¹¹ "more patients in state institutions at any one time than are in all our general hospitals combined," and causes the further dire prediction to be made that "one out of every 22 persons in this country will develop a mental disorder of a severity sufficient to require hospital treatment at some time in his or her life."

So that, as we go about in our practices, we should bear in mind that¹² "perhaps no condition to which man is subject presents such a variety of symptoms as those resulting from low blood-sugar levels," and it certainly becomes our duty to recognize and to feed the hungry brains that we see, rather than permit them to starve, as we now do.

It has been said that, "when the student of medicine passes to the study of mental disorders, he crosses a scientific frontier and enters into an entirely new province of knowledge." This new province perhaps covers too much territory for the non-specialist, but a study of the sugar levels of mental and nervous patients does not require postgraduate training, highly trained technicians nor elaborate and expensive equipment—in fact, my original equipment cost \$10.00 (new). This, together with a little time and a dram vial, containing a few crystals of sodium citrate and constantly available for the collection of a few drops of blood when indicated, on one's rounds or in one's office, will carry one far into the province of the nutritional disturbances of the brain. Any physician will find this to be an interesting, practical and, perhaps, remunerative addition to his practice, and those who use it will surely enjoy conducting many of their patients along the road back from mental abnormality to mental normality.

Bibliography

- 1.—Powell, Ellis: Cerebral Malnutrition: Its Cause, Effects and Suggestions for Treatment. *Am. Med.*, 30:9, Dec., 1934.
- 2.—Editorial: The Fuel of the Brain. *J. A. M. A.*, Jan. 16, 1932.
- 3.—Harris, Seale: Hyperinsulinism and Dysinsulinism. *J. A. M. A.*, 83:729-33, Sept. 6, 1924.
- 4.—Powell, E.: The Role of Diet in the Etiology and Treatment of Mental Disorders Resulting from Hyperinsulinism. *Tri-State Med. J.*, July, 1934.
- 5.—Harris, Seale: Clinical Types of Hyperinsulinism. *A. J. Digest. Dis. and Nutrition.*, 1:8, Oct., 1934.
- 6.—Aviation School of Medicine: Neuropsychiatry notes.
- 7.—Purves-Stewart: "Diagnosis of Nervous Diseases," p. 514, 7th Ed., C. V. Mosby Co., St. Louis, 1933.
- 8.—Vandervoort, Wm.: Contrasting Diabetes. *Battle Creek Sanit. News*, 8:22, Nov. 1, 1935.
- 9.—Idem, 3.
- 10.—McCollum, E. V., and Simmonds, Nina: "Food, Nutrition and Health," 2d Ed., 1931, p. 51.
- 11.—Beers, Clifford: "A Mind that Found Itself." 25th Anniv. Ed., p. 320. Doubleday-Doran.
- 12.—Idem, 8.

RIGHT, LEFT OR AMERICAN?

The answer to the question, "Will America go to the right or to the left?" is—neither. Both the radicalism of the left and the radicalism of the right are European in origin and international in purpose and significance; both aim to reduce American standards to world levels. The native, white stock of this country may well view with abhorrence the subtle activity of any group, right or left; religious, civil or financial, which would destroy the American system with foreign philosophies.

The revival of American security and the hope of a free civilization lies in a renewal of faith in those principles of government under which we became a great nation—a campaign of intense American Constitutional nationalism.—N. B. WHITE, in "The United States Need Not Surrender."

Antihormones or the Inhibiting Factor

By Herman J. Achard, M.D., Glendale, Calif.

FOR many years we have known that the endocrine glands are not a group of dissociated units. They are literally blood relatives which, in spite of marked individual peculiarities, depend a good deal upon one another and normally get along amazingly well together.

While this principle of functional interrelationship has become almost axiomatic, recent investigations have improved our conceptions of the mechanism by which the glands exercise their influence, both within and without the endocrine family circle. During the days of Sir Edward Schaefer's hormones and chalone, and of Falta's antagonisms and synergisms, it was thought that certain endocrine glands cooperated with one another but antagonized, and were antagonized by, still others. It was believed that the endocrine glands were regulated in this way and enabled to govern certain physiologic processes. Quite recently, F. Blum, of Frankfurt a.M., announced his theory regarding catechins (from the Greek *katéchein*: to restrain), which he designates as inhibitory substances adjusted to the hormones as "checking partners" (*Widerpartner*), or guards. Later we learned of Collip's antihormones.

Outstanding is the conclusion that the factors which restrain, regulate or actually counteract hormone action are not necessarily hormones themselves, but constituents of the blood that are able to influence the hormones. This is the view preferred by Collip, and evidently by Blum also, who goes so far as to claim that insulin is not a hormone, but a catechin.

These important discoveries of restraining factors supply another example of the remarkable regulating agencies through which the normal organism represses excess activity and prevents functional discord. To illustrate, the pituitary gland produces several hormones, among them the thyrotropic and the gonadotropic hormones. If the influence of the thyrotropic hormone upon the thyroid gland is excessive, the catechin, Blum believes, steps in and abolishes the response of the thyroid gland to the antepituitary influence. According to D. Roy McCullagh, excess antepituitary stimulation of the testes is counteracted by inhibin, a substance secreted by the testes.

Effects of Concentrated Hormones

The existence of checking agents assumes practical therapeutic importance because it appears that attempts rapidly to step up glandular activity by the introduction of

enormous doses of highly concentrated preparations (especially pure, active principles), may prove, not only futile, but disastrous. Sooner or later the organism refuses to respond to the treatment and may actively revolt against it. This fact has been observed occasionally since the early days of organotherapy, but it remained for Professor Collip to account for it scientifically. The fact that occasionally an individual, who should be cured promptly by endocrine therapy, not only fails to improve but even gets worse, is explained by this research worker (*Jour. Mount Sinai Hosp.*, May-June, 1934, i, p. 28), who asserted that the organism does not readily accept assaults upon its glandular equilibrium, and sometimes expresses its resentment by producing antihormones.

In animal experiments, injection of the anterior-pituitary-like principle from pregnancy urine results, first, in an increase in the size of the ovaries, which later is followed by a return to normal dimensions, despite continued administration. Injections of this principle into rats, over a sufficiently long time, may lead to a diminution in the size of the ovaries to even less than normal. This loss of sensitivity appears to be specific for the factor administered, because ovaries that are refractory to the anterior-pituitary-like principle still respond to preparations of the anterior pituitary itself. The reverse also has been demonstrated.

It has been claimed that the continuous administration of an extract of corpus luteum cannot maintain the endometrium of the rabbit in a stage of progestational proliferation for more than about seventeen days. Thereafter, despite further injections, the mucosa atrophies.

Injection of the thyrotropic principle of the antepituitary into rats causes hyperplasia of the thyroid gland and a sharp rise in the metabolic rate, but continued injections of the extract do not maintain this condition; the metabolic rate returns to normal in two or three weeks and may even go below normal. Subsequently, the animals fail to respond even to doses as large as eight times the previously effective dose. Serum obtained from rats thus rendered refractory, when administered to other rats, prevents the effect of the thyrotropic factor, while normal rat serum or normal horse serum does not act in this manner. But rats whose blood contains the inhibitory factor still respond to desiccated thyroid with a rise in the metabolic rate.

In explanation of this phenomenon of decreased response under continuous heavy

therapy, Collip and his associates have established the presence of specific antagonistic substances in the blood stream, which Collip designates as "antihormones" or "the inhibiting factor."

At the Chicago meeting of the American College of Physicians (*Ann. Int. Med.*, July, 1934, p. 10), Collip mentioned the frequent observation that a state of lowered reactivity, increased resistance or actual non-responsiveness may gradually become manifest in patients who have been treated for long periods with some glandular extract. Likewise, certain untreated animals or patients may be non-responsive to injections of a known-to-be-potent glandular extract. He said:

"The production of serum inhibitory to a specific hormone may be viewed in one of two ways: Either the administered hormone extract is acting as an antigen and the inhibitory substance which can be detected in the blood-serum of the treated animal is an antibody; or else the inhibitory substance represents a normal constituent of the blood which, under normal conditions, is balanced, as it were, against the respective hormone in such a manner as to be masked itself. We prefer this latter view, that the inhibitory substance which is found in the blood of animals after prolonged treatment with some hormone extract is a normal constituent of blood. The response of the organism to chronic injections of hormone would consist, then, in the increased production of the respective inhibitory principle. This theory may be extended further, and one may suppose that, for each hormone, or at least for many hormones, there exists an opposite, an anti- or inhibitory principle."

The working hypothesis that antihormones (or inhibitory hormones) are present in the normal subject is attractive, since it may explain such things as the great differences in the responsiveness of different species to different hormones, as well as minor variations in responsiveness within the same species. It suggests also the clinical possibility that any supposedly hypohormonic state may just as well be a hyperinhibitory-hormone condition, or an unbalance between the hormone and its respective inhibitory principle. Variations in the response to hormones led Collip to postulate the theory of inverse response, which he illustrates thus:

"The pituitary of the guinea-pig, as compared with that of the rat, contains relatively very little of the thyrotropic principle; the thyroid of the guinea-pig, as compared with that of the rat, is relatively inactive; the metabolism of the guinea-pig is exceedingly sensitive to administered thyrotropic hormone, while the rat is extremely resistant. However, the hypophysectomized rat is exceedingly sensitive to this hormone. The principle of inverse response of which the above is an excellent example may be stated as follows:

"The responsiveness of an individual to administered hormone varies inversely with

the hormone content or production of the individual's own gland."

The fact that, for certain hormones, inhibitory substances can be developed, suggests that the clinician, by too persistent treatment in his endeavor to correct a hypoglandular state, may actually add to the gravity of the situation by causing an overproduction of inhibitory principle. Again quoting Collip:

"While the results of these recent investigations in the laboratory suggest that many dangers may attend the clinical use of glandular extracts, nevertheless they point the way to new applications. If the general principles established by the experimental work are applicable to the human subject, then the possibility must be considered of producing inhibitory hormones in an active way in the system of the patient, or of raising the level of these in a passive way by the use of active extracts of inhibitory sera, the latter produced from horses injected over long periods with adequate amounts of the purified hormones."

In the second edition of "Recent Advances in Endocrinology" (Philadelphia, P. Blakiston's Son & Co., Inc., 1935, p. 393), A. T. Cameron mentions the careful studies of Collip and his associates, and concludes that a counterbalancing action, through production of some specific antagonist, may well be found in the blood and tissues of normal, and, still more, of hyperendocrine animals. Such a theory seems to be the basis of the work of Blum (*Schweiz. med. Wchnschr.*, Aug. 12, 1933, lxi, p. 777, and elsewhere), already mentioned, who has isolated a substance which he believes to be the thyroid catechin. It is a water-soluble, heat-resisting compound, which is practically nondialyzable. Blum thinks that this catechin is formed in the liver and passed into the blood. He found that it was decreased in Graves' disease. In Cameron's opinion, "The existence of specific anti-endocrine compounds, produced apparently in order to check undue endocrine activity, indicates both a hitherto unsuspected system of balanced controls, and at the same time unsuspected possibilities of variations due to different degrees of production of these 'anti-compounds' in normal individuals." (l.c., p. 399.)

In the *Lancet* for January 13, 1934, page 76, Drs. J. B. Collip and E. M. Anderson outline a method which they used in testing for an antithyrotropic hormone. This method was employed by Dr. C. F. Fluhmann (*Proc. Soc. Exper. Biol. and Med.*, June, 1935, xxxii, p. 1595), in a study purporting to determine whether an antihormone developing from the injection of an extract made from the pituitary glands of one species is effective against an extract prepared from the hypophysis of another species. His results justify the tentative conclusion that "there is a definite species-specificity in the development of 'anti-hormone' properties in the blood of rats in-

jected for long periods of time with pituitary gonadotropic preparations."

Clinical Connotations

These arresting experimental observations provide another confirmation of the fact that the empirical perceptions of the general practitioner often anticipate the highly scientific demonstrations of the laboratory worker. The successful treatment of certain diseases by means of glandular desiccations, administered by mouth, while affirmed by countless clinical trials, has been subjected to much adverse criticism and ridicule. Some have claimed that the only effective procedure was to prepare extracts containing the active principles of the glandular substances and to introduce them as directly as possible into the circulation; i.e., by parenteral injection. This reasoning has the sound of truth, and it was often delivered in accents of infallibility, but it has always been controverted by a wealth of clinical experience. Its fallacies have now been demonstrated scientifically.

When active principles are introduced in solution and are thrown directly into the circulation, by hypodermic or intravenous injection, the organism is stimulated sharply by these active principles and also by the proteins which carry them. Undoubtedly the quantitative antihormone response is much greater than when glandular desiccations are given by mouth, and this effect is complicated by the reaction to the foreign protein. Consequently, the method of active-principle or substitutive endocrine therapy is not free from objections and may be productive of dangerous complications, in that the effects of inhibitory substances may be combined with those of antibodies produced in response to the foreign-protein stimulation.

For these reasons, the antihormone idea tends to modify, if not to lessen, our confidence in the use of active-principle hormone therapy. The lesson to be drawn from the study of antihormones strengthens the idea of homostimulation. Antihormones are produced against excessive doses of active principles administered as substitutive therapy, because the organism resents being overwhelmed with substances that it cannot dispose of for its physiologic needs.

It may be remarked, parenthetically, that glandular desiccations do not necessarily or always contain the characteristic active principles. It is neither far-fetched nor irrational to assume that the various hormones are not secreted constantly and are not always present in the glands. It is reasonable to assume that they are present, usually in some preliminary form, and that the finished hormones are manufactured only on call, similarly as external secretions, such as gastric juice, bile and pancreatic juice, are poured out in response to the presence of food masses requiring digestion. This explains why many

glandular desiccations do not yield active principles on chemical extraction, while others do.

Coming back to homostimulation, it is emphasized once more that the best treatment is not by abrupt, forcible methods, but is administered gently, by persuasion. Desiccations of whole-gland substances exert such an influence upon the corresponding glands in the patient's organism. They do not overwhelm it, as do large amounts of active principles.

The Editor of the *Journal of the American Medical Association* (Nov. 10, 1934, ciii, p. 1456), discussing the resistance of the thyroid to stimulating substances, speaks of "the bewildering complexity of endocrine interrelationships," increasing knowledge of which "reveals more and more the hazard entailed in clinical application of recent contributions in this field." It may be stated that any hazard in the clinical application of experimental observations is of the Editor's making, and that of other theorists who, from the beginning, have insisted that the only worth-while endocrine therapy was substitutive and that the only permissible or active remedies were extracts containing the active principles. As Collip has shown, the unrestrained administration of potent hormone products is not free from danger. If the physiology of the subject were studied, it would be seen that the homostimulative method of treatment is free from danger and no less effective. It takes more time, but, in accordance with the law of compensation, the results are more lasting.

The various studies that have been mentioned afford a hopeful outlook for the conservative treatment of a condition that is greatly feared by men past middle age; namely, prostatism. William E. Lower and his associates have found that a direct connection exists between prostatism and the lack of an "inhibiting" antepituitary hormone. It was determined, first of all, that there are two distinct testicular hormones (McCullagh, *Science*, July 1, 1932, lxxvi, p. 19). The first is a benzene-soluble substance called "androtin," and is responsible for the development and maintenance of the secondary sex glands and other secondary sex characters. It corresponds to the follicular hormone of the ovaries. The second hormone is "inhibin," the water-soluble testicular factor that influences the pituitary gland. According to McCullagh, prostatic hypertrophy results from the insufficient production of inhibin, because of which the antepituitary influence upon the male gonads is excessive. It has been shown that inhibin, in doses that do not influence the secondary sex glands, will prevent this relative hyperfunction of the pituitary gland in castrated animals.

Discussing the same subject, Lower (*New England Jour. Med.*, April 27, 1933, ccviii, p. 878) mentions two ways of preventing hypertrophy of the secondary sex organs (for in-

stance, prostatism): first, by inhibiting the influence of the antepituitary lobe; second, by inhibiting the influence of the gonads. From a clinical point of view, the first method is difficult of accomplishment, unless a satisfactory and safe inhibiting hormone can be found, of which Dr. Lower is hopeful. He says that much can be accomplished by the second procedure, and there is considerable clinical evidence to substantiate the assertion.

Inhibitory Factors for Drugs

It may be permissible to extend the idea of inhibition, or antibody formation, into the general field of therapeutics, since there is no good reason why it should be limited to hormone therapy. It is a well-known fact that patients may become habituated to certain

drugs and no longer respond to doses that have been effective in the past. Sometimes constantly increasing amounts may accomplish the desired purpose; at other times the remedies in question are resisted entirely. This may explain the occurrence of arsenic-fast syphilitic patients, who become so after prolonged courses of arsphenamine, to mention only one instance. It is a frequent observation that patients who have been over-treated with vaccines or serums acquire a far-reaching tolerance to them. In short, the demonstration of these various "anti" substances, or regulating factors, bids fair to explain many of our therapeutic failures. It also stimulates the search for means to prevent oversaturation and harmful influences.

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Relapses in Morphine Addiction

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IT is well known that relapses frequently occur in cases of addiction to opium derivatives, which have been relieved by treatment.

In the article, "Morphinism," published in the *Medical Record*, July 7, 1935, I systematized, by paragraphs, all the peculiar observations and facts characteristic of the phenomenon of morphinism. Some of them seem, at first sight, to be, not only paradoxical, but even absurd. However, all these observations and facts can be expressed in exact numbers. The essence of morphinism, as a disease, is determined, in the first place, by an organic need of the sufferers for a definite daily dose of morphine preparations. This peculiar need can be measured and expressed at any given period of time by an exact number. According to carefully checked observations (six cases), the minimum dose of morphine sulphate needed by the patients in order to prevent their suffering from noticeable symptoms of morphine hunger, can be measured with precision to 0.0013 gram. This fact alone excludes the possibility of explaining the beginning of the disease by merely psychogenic factors.

It is known that the minimum doses of morphine, organically needed by a patient, may be substituted by certain physiologically equivalent doses of other compounds. Thus, in particular, one unit of morphine sulphate by weight can be substituted, irrespective of the individual peculiarities of the patient, by one-fifth of the same unit of dilaudid hydrochloride, or by one-third of a unit of heroin sulphate, or by eight units of codein sulphate. The very fact of the existence of equivalents of various substances; that is to say, of exact quantities by weight of each

of them, which produce in man a completely identical physiologic effect and therefore can take each other's place, excludes the possibility of explaining the phenomenon by psychogenic causes. From the chemical point of view, this fact proves directly that morphine and its derivatives (homologues and analogues) enter into a certain chemical reaction only in the organism of morphinists, and that this reaction determines both the withdrawal symptoms and certain relapses of the disease. There is no place here for any psychogenic factors.

Relapses occur after morphine, even a single and insignificant dose, has been introduced into the individual's organism, which had been, for a long time, freed from the need for that drug. I had occasion to observe a case of relapse, caused by a subcutaneous injection of 0.16 mg. of morphine sulphate (1 cc. of a solution 1:6,000). This insignificant dose may produce relapse even when complete abstinence has continued for a number of years. Even more remarkable is the fact, noted in the literature, that a relapse of the disease under such conditions occurs, even when the patient himself has no idea of the fact that morphine has been introduced into his organism. What psychogenic factors can have anything to do with such cases?

I have also had occasion to establish the fact that, in frequent cases of successful withdrawal of morphine for several months and the subsequent relapses of the disease, the original minimum dose of morphine preparations which the given patient organically needed in order to feel himself in a normal condition, remains constant, or almost constant, over a period of from one to two years. In particular, I once encountered a case in

which the patient successfully underwent twelve courses of morphine withdrawal, over a period of only three years. The first two times he underwent the shock type of withdrawal, with the aid of belladonna alkaloids and relatively large doses of codein injected subcutaneously, the maximum period of abstinence lasting, in these two instances, for eight months. The third time this patient got rid of the need for morphine with the aid of insulin, by Sackel's method; the period of abstinence lasted this time only two months. Later he underwent nine more courses of treatment, with the aid of Rossum. The period of abstinence after the ninth course of treatment has continued for nine months and has not yet been interrupted. The abstinence of the patient, after each of the preceding eight courses of treatment, lasted, on the average, only about four months.

It is interesting to note that the minimum dose of morphine needed by the patient in the first two years of the disease remained almost constant. It varied within the limits of from 1 to 1¼ grains (64 to 80 mg.) of morphine sulphate daily. In the third year the size of this dose began to increase rapidly, resembling the graph of a geometric progression. In spite of all the efforts of the patient to keep it within the former limits (1 to 1¼ grains) it reached, within a short time, 3½ to 4 grains (0.224 to 0.256 Gm.) daily.

In general, I am able to assert that a progressive increase of the minimum dose of morphine organically needed by the patient at the beginning of the disease, once begun, continues subject to a definite law which may be formulated in a mathematical expression. Apparently this law approaches Legrand's formula, discovered experimentally for the rate of granulation and epithelization of fresh wounds. Here we meet again with an exact numerical characteristic of the given phenomenon.

Of course, with earnestness and sufficient will power, a patient is always able to reduce the minimum dose of morphine, which he organically needs every day as much as he needs food and water. True, such a reduction is not easy; as a rule, the patient undergoes severe suffering, which is expressed in peculiar somatic and nervous symptoms and, of course, indicates that the reduction is achieved with the aid of certain chemical reactions in the organism.

Raynor and Bauer¹ write: "While some drug addicts are undoubtedly sincere in their wish to be cured, many enter with the sole purpose of having their doses reduced to an amount within the range of their incomes."

Other patients wish to reduce their daily dose of morphine in order to alleviate, as far as possible, the progressively increasing symptoms of chronic intoxication from which they suffer greatly.² It should be noted, however, that every substantial reduction of the "minimum dose" lasts only a very short time. On the third or fourth day after the reduction, the patient not only returns to his original dose, but as a rule even increases it by several grains at once. Apparently, this fact is due to the desire of the patient to get rid of the unpleasant feeling which appears in the process of reduction of the minimum dose.

The Post-Anaphylactic State

The theory developed by me predicted that a distinct post-anaphylactic state would appear in these patients after a certain period. Observation has justified this theoretic prediction. An addict who has fully abstained from morphine and has been cured of the symptoms of the shock; i.e., of the first state of his disease, later undergoes a characteristic pathologic state, with gradually increasing symptoms and a crisis.

The intensity and duration of the symptoms of the post-anaphylactic shock are determined by the same factors, in animals which have survived an anaphylactic shock, as in addicts abstaining from morphine. However, the influence of individual peculiarities in a human addict is considerably greater. For this reason the symptom complex of the post-anaphylactic state in morphine addicts has a very variegated character. The time of its appearance, rate of its development and its duration likewise vary widely in individual patients. Despite its variegated character this symptom complex can, nevertheless, be easily distinguished from other disorders. It is characteristic of a peculiar, undoubtedly curable, nervous disorder, which has not yet been described in the literature.

The first anti-shock preparation I tried was used in 1931, in 5 cases of morphine addiction. At that time, however, I was not yet acquainted with the post-anaphylactic state in man and animals; therefore I traced these 5 cases for only 10 to 15 days. Nevertheless, the personal testimony of these patients was noted, sometimes extending to six months of abstinence.

According to this oral testimony, no relapse occurred in any of the five cases, and the general condition and feeling of the patients apparently left nothing to be desired. However, this testimony is not to be trusted: In cases of relapse, the patients are, as a rule, ashamed to admit it. They carefully conceal their ill-feeling. This false shame is par-

2.—Asthemia, anemia, sleepiness, dizziness, complete absence of appetite, chronic constipation, irritability, progressively increasing loss of weight, sometimes a condition very close to cachexia.

1.—See *Medical Record*, August 7, 1935.

ticularly common in intellectual patients, especially physicians, but disappears entirely after the patient has been acquainted with the characteristic symptoms and the peculiar course of the post-anaphylactic state. In this way I succeeded in obtaining from Dr. M., after an insulin treatment, an admission that, after an abstinence of three weeks, he had returned to morphine injections. He was then subjected to a second course of treatment, this time with the use of Rossium. He undoubtedly succeeded, being finally completely cured.

The course of the disease and the details of the treatment of both stages of morphine addiction will be discussed in another paper. Here I will discuss the most characteristic symptoms of the post-anaphylactic state, common to all patients.

After the shock stage is over (with Rossium this period lasts from 3 to 4 days and with insulin treatment from 7 to 11 days), the patients, as a rule, feel well. Their appearance becomes more lively and the previously-lifeless, earthen-gray skin on the face acquires a normal color. Their attitude toward their fellow men changes abruptly. They become cheerful, laugh frequently, and their appetites leave nothing to be desired. They are no longer forced to take various laxatives and their blood pressure usually rises to normal. Some of the patients even experience euphoria. As a rule, they gain weight. When Rossium was used, I even observed a gain in weight when, in the shock stage of the treatment, the patients' weight had not changed.

This well-feeling and good condition of the patients, however, is not stable. Sometimes on the 15th to 25th day of the abstinence the resistance of the patients becomes weaker. Suddenly they develop restlessness. The duration of their sleep becomes insufficient. As one patient expressed it, they begin to feel "as if the ground under their feet has ceased to be firm and solid." Simultaneously, some patients begin to complain of pains or unpleasant sensations in the heart region. Headaches and trembling of the hands often occur.

Thus insomnia, restlessness, periodic profuse perspiration, tremor, gradually increasing general weakness, loss of self-confidence and heart neuroses must be considered as primary symptoms of the post-anaphylactic shock common to all patients, although the intensity of all symptoms is very different, depending on the individuality of the person and his profession.

Of course, in this stage of the disease, the patients become taciturn toward their friends and relatives. They converse readily and lengthily only with their physicians, asking them chiefly about the prognosis of their

disease and its duration. They cease to laugh, smile infrequently, and have sometimes the appearance of men waiting for an inevitable disaster.

Another symptom of the post-anaphylactic shock common to all patients is polyuria. The patients urinate, on the average, every 2 to 3 hours. However, I have never observed any cases of involuntary urination in this stage of the disease.

Depending on the method of treatment, this stage develops sometimes on the 12th, sometimes on the 26th, or even the 32nd day of the abstinence.

To some of the patients their condition begins to seem incurable, as if their organism has already been destroyed. They do not demand morphine, but sometimes ask their physicians, "Would it not be better to return to morphine injections?"

Sometimes cachexia may develop in the post-anaphylactic state, which subsequently reaches its crisis and finally ends in slow but complete recovery of the patients. In my practice, I have observed only two cases of cachexia. However, I have some grounds for believing that such a uniform course of the disease occurs more frequently, but that it is prevented by early relapses of the patients; i. e., the addict returns to morphine injections before the progressive loss of weight occurs.

The post-anaphylactic state is never confined to the symptoms mentioned above. From time to time, and as a rule suddenly, it begins to develop the symptoms of seemingly very varied and always unexpected diseases. One patient, treated three times by me, suddenly felt sharp pains of rheumatic character in the right knee joint, accompanied by swelling of the joint. Before meeting me, he was treated several times for morphine addiction, and he felt the same pains in the same joint whenever he succeeded in discontinuing morphine addictions for a sufficiently prolonged period. Usually they appeared between the 8th and the 18th day of complete abstinence, and ceased two or three days after the relapse.

Another patient, treated with hyoscine hydrobromide, suddenly felt, on the 32nd day after the treatment, a strong ringing in the ears and an attack of a terrible headache, of the typical migraine character. That he succeeded in withstanding the "temptation" was only by accident: He had no morphine on hand. The patient had never suffered from migraine. This first attack literally stunned him. The patient did not even understand at once why his condition had suddenly become so unbearably heavy and painful. At the time a hot bath was being prepared for him. He took it. In the bath his headache disappeared almost instantaneously, after having tormented him for about 2 hours, and he re-

gained his feeling of wellbeing, but not for long.

When I saw him I observed cyanosis of the face. It appeared that the patient experienced difficulty, not in exhaling, but in inhaling. He suffered from congestion and itching of the mucous membrane of the nasal passages, of only one side (the right). He could not breathe through the nose, feeling as if there were a solid stopper inside the nostrils. As he said, he had a desire to drill or to push through the nose roughly, so as to open a passage for the air, even by means of carpenters' tools.

Using modern terminology, I defined this state as an attack of atopic coryza, meaning, in substance, "a strange cold." At my suggestion he consented to try the action of adrenalin (epinephrin), and an injection of 1.4 cc. of a 1:1,000 solution instantaneously arrested the painful attack.

Subsequently he repeatedly suffered from attacks of atopic coryza, which occurred always unexpectedly and suddenly during 3 or 4 days. However, their acuteness decreased considerably with every new attack. The migraine attack, on the contrary, did not repeat itself.

In two other patients, who were treated by me with the aid of Rossium, I observed, as a late symptom of the post-anaphylactic state, a typical attack of bronchial asthma. In one of them it occurred on the 26th, in the other on the 52nd day of abstinence. In both cases I succeeded in arresting the attacks quickly by means of epinephrin. Neither of these patients had ever suffered from bronchial asthma before. On detailed questioning I found that they apparently had no hereditary predisposition to allergic diseases.

I cannot omit to mention another typical case of morphine addiction which, unfortunately, culminated in a relapse quite unexpected both by me and by the patient himself. The patient was treated by means of Rossium. In his case the shock stage of the disease was extraordinarily light, the patient suffering only from insufficiency of sleep and comparatively insignificant general weakness. The post-anaphylactic state was also of a very light form. On the 20th day he felt, not only satisfactorily well, but actually cheerful. His general condition did not differ from normal, and he was gaining in weight.

However, on the 28th day of the abstinence, suddenly he developed sharp gastric pains and colics, accompanied by exhausting diarrhea and copious, violent and long-continued disturbance from gas. His temperature rose to 38° C. (100.4° F.) and remained at this level for five days. At the beginning of this sudden disorder he did not even think of morphine preparations. He

explained it as being due to an accidental poisoning by some not-quite-fresh food product. He succeeded in stopping the diarrhea on the following day by means of bismuth subnitrate, which he took in doses of one teaspoonful every three or four hours. Moreover, he changed to a vegetarian diet. However, the painful colics in the abdomen, with noisy movements of gases and liquids in the large intestine, not only did not disappear, but, on the contrary, caused him even greater suffering. The temperature remained at the same level, but at nights fell, sometimes considerably below normal (to 35.5° to 36.0° C.—95° to 96.8° F.). Salol relieved his condition, but only for short periods. Soon even the further eating of food, in spite of the modest vegetarian diet, caused profuse perspiration and extreme weakness, as if the very process of hunger satisfaction had become a heavy burden. The patient suffered without respite for five days. During this time his insomnia increased considerably. Finally he felt the necessity of returning to morphine.

It is interesting to note that the negligible first dose of morphine sulphate ($\frac{1}{8}$ grain) had the effect of a magic wand: the sufferings ceased almost instantaneously, but his temperature dropped to normal very slowly, during three days.

At first the astonishing variety of the late symptoms of the anaphylactic state puzzled me. They seemed to have nothing in common. One could even doubt their direct relationship with morphine addiction. I had before me the picture of an apparently real atopy. However, a closer examination convinced me that this variation was in reality of a purely superficial character. The symptoms are always those of allergic diseases. We meet here sometimes with an acute allergic mucous colitis; sometimes with probably allergic arthritis; sometimes with migraine or various neuralgic pains; and finally with the symptoms of typical bronchial asthma, so-called hay fever³ or atopic coryza.

Sometimes these varied symptoms, appearing almost simultaneously in the same patients, quaintly intertwine; sometimes, as if taking turns, they successively replace each other. Many of these symptoms are repeated periodically, appearing every time suddenly and unexpectedly. As a rule, they quickly attain great acuteness and sometimes cause severe suffering to these patients. In many patients they cause an almost panicky feeling, and often determine the relapse. However, all these symptoms disappear, without leaving a trace, as suddenly and unexpectedly as they have appeared.

3.—In this disease frequently neither grass nor flower pollens play any part, while the fever is absent in an overwhelming majority of cases.

An ex-morphine addict, suddenly overtaken by these symptoms, usually produces the impression of a depressed, seriously ill person who should stay in bed; yet it frequently happens that the same patient, one or two hours afterwards, entertains one with a lively and even fluent conversation, laughs heartily, jests and, at this time, in his general condition, there could be found nothing deviating from normal, either subjectively or objectively.

There is another essential factor which destroys the purely superficial variety of the symptoms and combines them into a prolonged symptom complex of the same characteristic disease. This factor is the reaction of the patients to the injection of any, even an insignificant, dose of morphine preparations, or of adrenalin chloride. These two preparations arrest all the varied symptoms, early as well as late, of the post-anaphylactic shock I have described, within the shortest time—sometimes instantaneously.

Treatment of the Primary Shock of Withdrawal

In the primary shock stage of morphine addiction, Rossium should be administered by mouth during the first four to five days. In doses of 5 to 8 grams per day, according to body weights, with equally spaced intervals between the ingestions, this preparation alleviates all symptoms of the shock, with the exception of insomnia, an insignificant general weakness (which quickly disappears), sneezing and cough. As a rule, this weakness does not affect the generally satisfactory feeling of the patients. As a matter of fact, in a great majority of patients, Rossium decreases

the suffering in the shock stage of morphine addiction to a quite negligible minimum.

Conclusion

I am far from asserting, of course, that the post-anaphylactic state of morphine addicts has already been studied in its entirety. On the contrary, from my point of view, its study has just begun.

I have succeeded in showing that man and guinea pigs or rabbits are equally subject to this stage.⁴ It occurs inevitably in animals that have survived the anaphylactic shock, as well as in morphine addicts who have renounced morphine and undergone the first or shock stage of their disease. In general, not much has been achieved. However, in order to be able to struggle with a very strong or a very cunning enemy and overcome him, we must become familiar with him. We must study in detail the character, habits and weak spots of the enemy.

This first step in the struggle with morphine addiction has undoubtedly been made. We have become acquainted with the enemy. The physician has learned how to alleviate the severe sufferings of the patients in the violent shock stage of the disease. He can prevent, in this stage, the menacing repeated fainting spells and collapse. The causes of relapse, which is almost inevitable under the modern method of therapy of morphine addiction, have been also disclosed. I am sure that the time when the physician will learn to cure morphine addiction faultlessly and absolutely is not far off.

15 E. 40th St.

⁴—Ostromislensky: *Journal of Immunology*, July, 1935.

KEEP THE PATIENT HAPPY

Tell the patient something—anything that will keep his imagination from soaring into the regions of unhealthy speculation. It is a good plan sometimes to be symbolic—to illustrate the patient's condition, or supposed condition, by some mechanical analogy. You can refer to trouble in his engine-room, or explain that his dynamo requires tuning up, or his accumulators recharging, or that an overstrained spring must be relaxed. Something tangible and concrete like that—something he can bite on. Tell him that he has a Rolls-Royce body, but that there is water in the carburetor or the petrol pressure is faulty. That will cheer him up much more than to tell him baldly that his malady is functional and not organic. It is a strange thing, the amount of solid comfort a nervous person can derive from having his interior compared to that of a motor-car; but the comfort is there—especially if you tell him he's a Rolls-Royce.—IAN HAY, quoted in *Pharmaceutical Advance*.

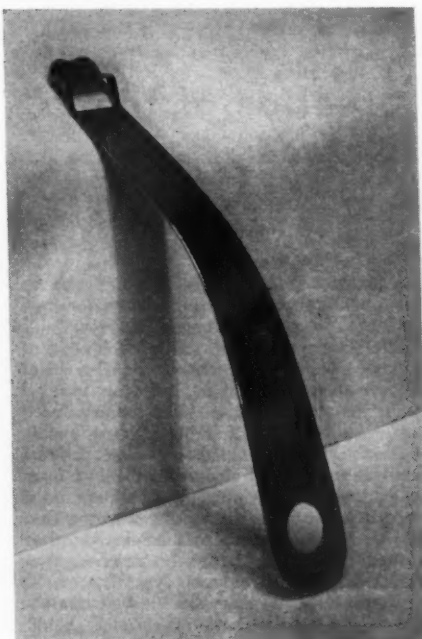
CRACKERS

Step into your pantry, where you will find a package of ordinary soda crackers, and read the weight printed on the wrapper. The five-cent package now contains 3¼ oz., but before the process taxes were imposed you received 4 oz. for five cents. This is a reduction of 20 percent in weight. You have no doubt noticed the packages getting smaller. These hidden taxes are being paid on many items of food and clothing.—FREDERICK G. THOMAS.

New Instruments for Throat Examination and Treatment

By J. B. H. Waring, M.D., Wilmington, Ohio

FOR the average physician, the examination and diagnosis of adenoids is a somewhat unhandy procedure. With the electrically-



Courtesy, The Mim Co.

Fig. 1.: The Adenoidoscope.

lighted nasopharynoscope, examination is difficult, if not impracticable, in children; so the average practitioner is forced to depend upon laryngoscopic-mirror examination of the postnasal space; clinical signs and symptoms; or the time-honored (or dishonored) method of digital examination, which usually results in a gagging, frightened child and an indignant mother.

To obviate these disadvantages I have developed, for this examination, a simple little instrument which, for want of a better name, is termed an **adenoidoscope**, because that is what it is (see Fig. 1). The proximal end of the instrument is a tongue depressor of the Bosworth type.

Under direct inspection, the distal end of the instrument is passed into the opened mouth, back of the uvula, which is gently engaged upon and lifted by the shelf-like ridge at the upper end of the instrument. Then, with light

from a head-mirror reflected through the rectangular aperture just below the shelf, the posterior pharyngeal wall may be fully examined and the presence or absence of obstructing adenoids quickly and easily determined. After an adenoidectomy, the post-pharyngeal wall may likewise be quickly and easily examined as to the thoroughness of the operation.

This instrument is made in two sizes, small and large, for use in the throats of patients of different ages and sizes.

Another instrument, which has been very convenient and helpful, is a combined pillar retractor and tongue depressor, which I have called a **tonsilloscope**. (Fig. 2.)

Retraction of the anterior tonsillar pillar at the same time that the tongue is depressed, ordinarily requires the use of both hands of the examining physician, or one of his hands and one hand of a nurse or assistant. In either event, such combined examin-



Fig. 2.

ation is rather clumsy and unsatisfactory. Because the operator is seated in front of the patient, it is difficult for an assistant to see the pharynx accurately with the operator's head in front of him and obstructing his line of vision. Using the tongue depressor thus blindly, it is difficult to retract the tongue properly; and the same thing applies to retraction of the anterior pillar. If the operator uses both of his hands, it is difficult for an assistant to employ instruments for hemostasis or examination, with the operator's head in his line of view.

The combined instrument was developed primarily to make it easy for a tonsil operator to examine a tonsil fossa completely after a tonsillectomy and, where hemostasis is required, to have one hand free for instrumentation. However, it is just as satisfactory where the physician wishes to examine the tonsils thoroughly for diagnosis or treatment purposes. With one hand, using this instrument, the anterior pillar is easily retracted and the tongue depressed at the same time, thus completely exposing the field.

After a tonsillectomy, the pillar is retracted and the tongue depressed with this instru-

ment in the one hand, while with the other hand the operator is free to apply sponge forceps, pick up an oozing point with hemostatic forceps or put in a suture, as may be indicated.

These instruments are made in rights and lefts and, as finally perfected, have proved invaluable in treating the throat, as one is thus enabled to perform tonsillectomies unaided. Likewise, in electrocoagulation treat-

ment of the tonsils, the entire tonsil is completely exposed to view so that, with his other hand, the operator is able to apply the coagulating needle easily and accurately over the surface of the tonsil, with the anterior pillar and tongue safely retracted.

These simple, highly efficient little instruments have been developed for me by The Mim Company, surgical dealers, of Wilmington, Ohio.

Factors in the Perpetuation of the Venereal Diseases

By Edward S. Pomeroy, A.B., M.D., Salt Lake City, Utah
Urologist, Holy Cross and Salt Lake General Hospitals

SO far as we know, the venereal diseases are acquired only by direct contact with the living causative organisms in, or coming from, some living human host. If, then, all human carriers of the venereal diseases could be isolated to prevent their further dissemination, and if those so isolated were persistently and properly treated until either completely cured, rendered non-infectious or removed by death, the scourge of venery could be eradicated from the face of the earth.

Of course this is an impossible program, and we must turn our attention, in the problem of preventive measures, to those factors which are largely responsible for the perpetuation of these infections.

Obviously, since the occurrence of venereal diseases appears to be as prevalent as ever, either the patients so infected infect someone else before they are cured, or they are not being cured.

Inasmuch as a study of 100 case histories in our office discloses that over 40 percent of our gonorrheal patients admit previous gonorrheal infections treated elsewhere, evidently a large proportion of these are recurrences, whose bearers have been running around for some time uncured, resulting in a chain of possible contaminations. Often very true is the current confession: "I have had a lot of doses; they are all well but the first one."

Factors involved in questionable cures of gonorrhea are:

The Physician. Distasteful as it is, when we know that many medical men accepting gonorrheal patients for treatment consider it a "side line" and do not give it serious attention, we must admit that the failure of complete cure often lies with the medical profession itself. Many physicians never personally give a treatment, allowing the patient to treat himself. Not a few doctors have as a criterion

of a cure for "clap" the cessation of the appearance of gross pus, never looking at the urine nor examining the prostate.

Often these cases are taken on a flat-fee basis, and the physician is eager to be rid of them as soon as possible. It is this type of practitioner who contributes to the erroneous and prevailing idea of a quick cure, and is responsible for the restlessness these patients usually exhibit, with frequent shifting from doctor to doctor seeking, not thoroughness, but speed. Any patient with gonorrhea that has been treated less than 12 weeks; that has not had his urine persistently watched; that has not been given a great deal of personal attention by his physician, including examinations of the glandular secretions etc., should be viewed with suspicion as to a cure.

The Counter-Prescriber. Some druggists always did and presumably always will prescribe in order to sell drugs. Better prescription pharmacists have learned that this does not pay, and they are cooperating with their physicians; but the back-street and around-the-corner shops are still responsible for their share of uncured gonorrhea and many of its complications.

The Uncooperative Patient. Due principally to the problem of economics, many patients are, by necessity, urged to seek hasty recoveries, and very often are required to carry on, while sick, work that is incompatible with rapid and uneventful progress towards a cure. Not a few of these cease treatment before they are entirely well, or shift from one doctor to another as fast as their credit rating becomes questionable; and finally they disappear with an unknown status as to cure.

Autoprescribers. These self-treaters and those treated with drugs or "second-hand" prescriptions recommended or given by friends, have assumed large proportions dur-

ing recent periods of economic stress. Some of these contract painful and disabling complications. One such I found, after his friends had thwarted his attempt at suicide, with a massive abscess of Cowper's gland; another had acquired a series of a half-dozen painful strictures of the urethra, through the self-administration of tincture of iodine with a hand syringe; others have appeared with prostatic abscesses, epididymitis, acute arthritis and many other embarrassing conditions.

All of these patients not handled expertly from the onset, are much more difficult for even the specialist to manage when they do finally seek his help. And those who have had irregular treatment are always doubtful cures.

Women. Many women with venereal diseases will not consult a doctor, because of fear or modesty. Others cannot, because of financial inability. Many girls' salaries do not total the rates charged by physicians per week for such treatment. Not a few women fail to seek relief because they are totally unaware of the nature of their infection. In these latter, after the acute onset of gonorrhea has subsided, many are unaware of any further trouble and honestly consider their health as above reproach. It is these patients who are responsible for a very common situation, in which their male companion acquires gonorrhea and accuses them of infecting him, whereupon the woman subjects herself to examination and is told, "The slide is negative." Of course it is negative, because the specimen was obtained from the mucous surfaces, when the bacteria are buried in the depths of various glands, of which those of the cervix uteri are most important, and their presence there is very difficult to demonstrate.

Men, as a class, take gonorrhea seriously, and the large majority will cooperate with their doctors and are very eager to obtain a complete and permanent cure. Because of modesty, fear, financial inferiority or ignorance in these matters, it is the women who are most at fault in the propagation of venereal diseases. Also, because of woman's impregnable social position, they are most remote factors for any attempt at social control, excepting through education. Even education is difficult to popularize on such delicate questions.

Prostitutes. The professional prostitutes claim that, because they are "better informed" in these matters and learn how to "take better care of themselves than other women," and because of frequent medical supervision, they are less likely to infect anyone than other women at large. There is this to be said of prostitutes; that, following the law of

averages, none of them can go on contacting a large number of men without eventually acquiring some or all of the venereal disorders. It is only a matter of time and repetition. The worst aspect of danger from "sporting women" comes from the fact that, when infected acutely, they are usually unwilling to forego their financially productive activity for very long, if at all. Periodic examinations and detention of detected cases by health authorities fail to eliminate the dangers from this source, because of political irregularities, bribery and inefficiency.

Alcohol. The drinking of alcoholic beverages is linked up intimately, in several ways, with the perpetuation of gonorrhea. It is frequently the greatest factor in the prevention of recovery by the uncooperative patient, who will not suspend drinking it long enough to get well. It often is responsible for the development of complications of gonorrhea—acute prostatitis, epididymitis, arthritis, etc. It is the greatest irritant which prevents spontaneous recovery in those cases who suspend treatment before they are well, and the most potent factor, combined with other excesses, in the production of exacerbations and recurrences; moreover, it is intimately linked up, first, last and nearly always, with the original acquisition of the disease. Venery and ethyl hydrate are, indeed, traditional bed-mates.

Free clinics. While some free clinics are manned by capable and earnest attendants, many of them are without proper supervision and the work is left to interns or others, with usually shifting and temporary personnel; and often there is no attempt to give any service much more than "first aid." Any system of follow-up is out of the question in most free clinics. Many of these organizations are political in nature, and appointments of attendants are usually made on some other basis than professional fitness. Graft arrangements with and between "managers" of "sporting houses" and vice-squads have been reported, wherein the inmates are directed to attend the private offices of attending political physicians for weekly paid examinations, and those who do not fall into line are subjected to frequent raidings and jail detention. If these unfortunates attempt to defend themselves or threaten public exposure, they are given swift "floaters" out of town. Naturally this type of free clinic is worse than none.

Proper control of the venereal diseases can be accomplished only by a thorough study of these fundamental sources of their perpetuation.

Judge Building.

PHYSICAL THERAPY AND RADIOLOGY

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The Non-Thermal Aspects of Short-Wave ("Radio") Therapy in the Range between 2-Meter and 30-Meter Wavelength

By Frank Thomas Woodbury, M.D., Col. U.S. Army (retired), Poughkeepsie, N.Y.
and

J. Henry Hallberg, Electrical Engineer, New York City.

THE tremendous interest in what has been called "short-wave" and "ultra-short-wave" therapy during the past four years, as evidenced by the many books and articles upon this subject, has brought us a great variety of facts and a greater variety of erroneous impressions.

The electromagnetic waves which we are considering, and which we may abbreviate to "radio," lie in the Hertzian region at the other end of the electromagnetic spectrum from the gamma rays emitted by the radioactive elements.

The Hertzian region blends with the infrared region of the spectrum at wavelengths of 0.3 to 0.2 millimeters, which have been produced equally well by oscillating electric currents and by rays from the hot quartz burner of a mercury-vapor-arc lamp which were filtered through pasteboard (Rubens and Von Bayer, 1911).¹

Electromagnetic waves, of whatever size and however produced, are an agency for transferring energy from one material body to another material body, without the aid of an intervening material conductor.

Energy is a manifestation inseparably connected with material bodies, and it may be identified as mechanical, thermal, chemical, and electrical. Any of these forms may be transformed into any one of the others.

When any one of these forms of energy is developed in living cells, as the result of the absorption of "radio," bioreactions are stimu-

lated. By choosing our agent, we may therefore produce the desired form of energy in a tissue or individual for therapeutic purposes.

In the range which we are specifically considering; namely, between 2- and 30-meter wavelengths, insofar as clinical and laboratory observations afford information, the mechanical energy generated is minimal; the thermal energy is maximal; the chemical energy is marked, but varies with the tissue and the application; while the electrical energy, though present, has not been definitely measured.

The clinical data at hand may be arranged in three groups: (1) data from raising the body temperature well above normal—usually to 40.5° C. (105° F.)—for a period ranging from one to five hours; (2) data from raising a local tissue, as the knee, head or chest, to a temperature slightly above or considerably above the normal blood temperature for periods of less than an hour; and (3) data from applications where the rise of local or general body temperature reaches less than one degree F. or is not raised at all above normal.

We are not at present concerned with thermal effects, but it may be said in passing that, although the production of "friendly fever" by radiotherapy is highly dramatic, we believe the method to be obsolescent and destined to take rank with autocondensation, autoconduction and diathermy, as used for

this purpose. Our belief is based upon the fact that there are many other physical methods of producing therapeutic fever, all of which are simpler, less expensive, safer and universally obtainable.² Provided that a tissue is adequately and safely heated to a determined degree of temperature, the bio-reactions obtained are always the same, irrespective of the method of heating.

It is pertinent here to register strong disapproval of the use of slovenly and uninformative terms. If we are using radio fields, why not say radio treatment or radiotherapy, and give the factors, just as is done in x-ray therapy? Instead we find "short-wave" and "ultra-short-wave" therapy, "infradiathermy," "short-wave diathermy," "neodiathermy," etc. A "short-wave treatment" is no more explicit than a "hypodermic treatment." Then again, as we have other and very important effects not due solely to heat, it is not synonymous with thermotherapy.

The factors that should be stated in every case are: the wattage, the wavelength, the technic, the time of application, the tissues under treatment, the frequency of the applications and the energy in the condenser circuit, which includes the patient. If the tissues were raised in temperature above normal, that should also be stated; but that does not make the treatment preponderantly a heat treatment.

We feel that thermotherapy has almost stolen the play and that it is timely to point out the non-thermal effects of radio treatments. We say "non-thermal" to avoid precipitating our remarks into a discussion of the exact nature of many biophysical and biochemical phenomena, which are not connected with heat but which assuredly play an important rôle.

If curative effects are attributable solely to a rise of temperature, then any wavelength from 2 meters to 300 meters (or indeed any physical agent) which will heat the body or localized tissues to a therapeutic degree of temperature will be a satisfactory thermotherapeutic procedure.

If, however, the therapeutic result seems to be invariably connected with a specific wavelength or a range of the spectrum, irrespective of heating effects, and cannot be obtained from other shorter or longer wavelengths, then we can speak of selective effects due to wavelengths and can disregard the thermal aspects for the time being.

If we can reduce the energy of the radio application, while still applying the specific wavelength, until we get no appreciable heat effects but still obtain definite therapeutic results, then we can speak of specific non-thermal effects of radio.

We must not conclude that, because a tissue does not rise in temperature above that

of the blood, no heat is produced. The blood stream is an equalizer of body temperature, since it carries off the heat generated within the body, to be cooled by radiation from the skin, by evaporation of water from lungs and skin, and by conduction. Should, however, heat loss be prevented, even without the additional heating from the absorption of radio, the temperature would rise to fever heat, merely from the ordinary metabolism. By "non-thermal aspects" we imply results not ascribable to hyperthermia of localized masses of tissue or of the body.

Mechanical and Electrical Effects

The mechanical effects resulting from radio absorption, at present are merely surmisable. That there is a mechanical (vibratory) effect upon biologic structures of cellular magnitude, depending upon their size, is sure. Thus the mechanical resonance of the red cells, which have a diameter of 7.5 μ , corresponds, insofar as frequency is concerned, with a wavelength of less than 4 meters.

The electrical effects can be readily demonstrated as follows: Place an individual, seated, either within the field between two condensers or in the beam from a special reflector-emitter, and have him hold in his two hands the extremities of wires connected with a test lamp of 5 to 25 watts. The lamp may be made to glow (at varying distances between the subject and the emitter, in the case of the beam), which shows the generation of a current, imperceptible to the individual, capable of illuminating the lamp. This was done long ago by d'Arsonval with his "grand solenoid."³ The effect of these oscillating currents upon the tissues traversed is at present problematical.

The chemical effects, though demonstrable in solutions of electrolytes and colloids *in vitro*, can only be surmised by the therapeutic effects which we shall now present.

Biologic Effects

The earliest observations of the non-thermal effects of radio were made by d'Arsonval and Charrin, using wavelengths from 200 to 300 meters and a spark-gap circuit. They found that certain bacteria were inhibited, that certain toxins were changed to toxoids, and that snake venom was rendered non-lethal.

Attempts have been made recently to find wavelengths specifically bactericidal, but without conclusive result. When, however, we turn to clinical data, we have considerable evidence pointing to an antiseptic effect of radio below 10 meters in wavelength upon infections with inflammation and even supuration, with particular efficacy of wavelength 4 meters. This holds good for general septicemic diseases such as brucelliasis (undulant fever).

Liebesny,^{4,5} who concentrated his energies

upon the treatment of suppurations with wavelengths between 3.7 and 15 meters, using an oscillating tube circuit with 1.5 kilowatts, has established certain rules to which he attributes an absolute value. They may be epitomized as follows:

1.—The optimum effects in deep tissues are obtained when the condenser electrodes are held from 10 to 20 centimeters from the skin and when the waves are produced at a high voltage, but the intensity is minimum.

2.—In the treatment of infectious diseases there are no appreciable electrical effects. Heating is not only useless but harmful. Heating the skin is avoided by increasing the interval between it and the electrodes. Heating the deeper-lying tissues is reduced by using a very weak intensity of current.

The patient should experience no sensation of heat. Excessive heating provokes harmful vasomotor reactions. In this case the heat sensation of the skin is a guide to treatment. If heat is sensed, it is a sign that the energy administered is too intense.

3.—The influence of the wavelength has not been determined (by Liebesny). The majority of treatments were given with 6 to 8 meter wavelengths.

4.—It is useless to prolong an individual treatment over 20 minutes. Daily treatments are the rule. From six to thirty treatments may be required in various cases.

Where the suppuration is superficial, but one condenser electrode need be used; if deep, two electrodes. One may speak of the active and the indifferent electrode. The active one has an area coincident with that of the inflamed zone and is placed 5 centimeters from the cutaneous area. The indifferent electrode may be placed beneath the bed at a distance of from 10 to 20 centimeters.

Furuncles, anthrax, phlegmons of the upper lip, maxillary abscesses, whitlow, etc., yield without the knife. After three or four treatments the suppuration "comes to a head" and may be evacuated by the actual cautery or by electrocoagulation. Liebesny's only failures have occurred where cases were treated surgically at the beginning of the irradiation.

The deep-lying suppurations are treated similarly, but the electrodes are separated from 10 to 20 centimeters from the skin surface. Emphysema and pulmonary abscess yield rapidly. From ten to twenty applications suffice to produce a profuse expectoration, the patient increases in weight, the temperature falls, the cavities close, with a residual sclerosis. Liebesny has had no failures in these cases.

Tuberculosis is not a contraindication to this treatment, but care is necessary to avoid all congestion caused by heating. Cold abscesses of the joints gave good results.

Even pulmonary cases, with hemoptysis and fever, progressed favorably, both clinically and radiographically. This report is concerned with fibro-congestive and not the caseous-ulcerative forms.

Liebesny considers that radio, in these wavelengths, has no effect upon neuralgias and rheumatism, whereas other physical thermal agents have.

Effects on the Nervous System

At the Vienna Clinic of Neurology (O. Potzl, director), a study of the effects of radio upon nervous complaints was carried out since 1932.⁶ The apparatus used permitted a variation of intensity between 0 and 1.5 watts and a wavelength between 2.8 meters and 20 meters. No ill effects such as have followed x-radiation were seen in the treatment of over 2,000 patients and in many experiments upon well persons.

A very ingenious device was instituted, whereby a number of patients might, while dispersed about the grounds of a garden, receive treatment from one apparatus, each one receiving a different intensity of application. The distance from the emitter of radio was 150 meters (161 yards 9 inches).

In order to concentrate the radio field upon the affected area, the part was covered over with a woven metallic fabric. This fabric has been used by others as a protection against the radio field, which Weissenberg maintains is erroneous, as can be demonstrated by a simple electrical device, or detector. The emitter took the form of a plaque antenna, which might be turned in any direction to throw a radio beam upon a part.

They found that the nervous response of healthy persons and those with nerve lesions was different; that radio of the same intensity acted more powerfully upon patients having sensory and vegetative nerve disorders than upon healthy persons; that the treatment of similar cases in the field of the condenser, by the usual methods, often produced an aggravation of symptoms, whereas reducing the energy to very small degrees often gave good therapeutic results; that the efficacy of intensities could be proved in similar cases by objective methods; that to obtain results with such small quantities of energy, certain physical conditions must be fulfilled; that by fulfilling these conditions, patients may be treated at a distance of 150 meters by an oscillator of 1.5 kilowatts and that the results are clearly apparent and without any harmful sequels.

In disorders due to motor nerve disease they found that, after a treatment, the patient experienced an agreeable fatigue and a need for sleep and was better able to sleep.

In healthy persons the motor nerves did not respond, but in cases of central or peri-

pheral paralysis, changes have been noted after even one treatment. In cases likely to recover, recovery was decidedly hastened.

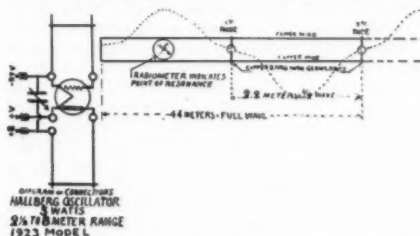


Fig. 1.—Early (1923) form of short-wave ("radio") oscillator circuit.

Localized paralyses were treated with as intense an irradiation as possible in the field of the condensers, while hemiplegia and paraplegia were treated with the most feeble fields.

Maladies of sensory nerves respond very markedly. These cases do not respond well to intense fields, but show an exacerbation of symptoms. When treated with very small quantities of radiant energy, they showed, even during the first irradiation, a diminution of discomfort, and its total disappearance after several treatments. These weak treatments were repeated at frequent intervals.

In diseases of the vegetative nervous system, which represented the bulk of the patients, treatments too weak to affect healthy persons produced marked changes in the secretions. These were not uniform, depending upon the duration of the condition prior to treatment.

Patients having pain as a symptom were rapidly relieved of pain, often in a few minutes, so that they fell asleep during the irradiation. Radio has a decided analgesic and calming effect in neuralgias and neuritis of the trigeminal, dental and radicular nerves, and in the excited and agitated mental cases, as well as in septic meningitis, encephalitis and insomnia. Certain muscular spasms were also allayed.

The Clinic has also found weak fields to be a very efficacious antispasmodic, without the least heating effect, in vascular diseases, such as acroparesthesia, bronchial asthma, angina pectoris, threatened gangrene of Raynaud's disease, and in intermittent claudication. Hyperthyroidism has also been benefited, as well as migraine and cephalalgia. It must be emphasized that the energy employed in these cases was almost the one-thousandth part of that used in the ordinary so-called short-wave treatments.

Stiebock says, "According to our experience, dating back almost a decade, one thing is certain: It is not the linear increase of the current quantity which produces the

desired therapeutic effect, but the employment of small doses of exact emissions, occasionally determinable even in decimals, which under certain circumstances must be introduced with very great energy. There is no intention at all of attaining a manifest heating, in the old sense. This, as I have so often stressed in my publications, is attainable by diminishing to the utmost degree possible the period of radiation and by increasing the individual applications. Accordingly, the time of application should exceed four or five minutes only in exceptional cases."

It will be seen, then, that we may use a



Fig. 2.—Modern type of "radio" apparatus—the Sychrotone.

powerful apparatus at a distance or a weaker apparatus close up, and obtain mild, sub-thermal treatments. It is analogous to photothermal treatments by various sizes of lamps. The treatment may be given between condensers or in the center of a solenoid or as a beam from a plate antenna or as a field from a wire antenna.

Development of Apparatus

The first apparatus for producing radio within this region of the spectrum, for experimental physiologic study and treatment, was designed by one of us (J.H.H.) in 1922.^{8, 9} It generated a wavelength of 7.56 meters, at an energy of less than one-thousandth of a watt (milliwatt). If this be considered weak, in comparison with present radiotherms, we may consider the ultraviolet portion of solar radiation, which produces

energy upon surfaces (U. S. Bureau of Standards), between 30 and 90 millionths of a watt (microwatts) per square centimeter of area.

Working in the Burnett-Timken laboratory, the generator was further developed and tested. As the phenomena comprised very small waves and very small energy, it was necessary to design novel and delicate instruments, of great accuracy and sensitivity, to detect and measure the radio output.

As a result of these labors it was possible, in 1923, to produce standing waves upon a wire and to demonstrate, audibly and visually, not only their length but their form. An early form of the circuit used is shown in Fig. 1. It produced wavelengths between $2\frac{1}{2}$ and 8 meters, with 5 watts of energy.

The latest model (called the Synchrotone), which is shown in Fig. 2, produces wavelengths, at will, between $2\frac{1}{2}$ and $4\frac{1}{2}$ meters, at either 15 watts or (in a supermodel, for those desiring decided thermal effects) 50 watts. When using an ordinary wire antenna the Synchrotone will broadcast, at these wavelengths, an energy which will raise the body temperature of those working near by about one degree Fahrenheit in an hour, due to an increase in metabolism.

When the terminals of a 25-watt lamp are placed in parallel circuit with the body, being held by the hands which also hold the condenser electrodes, the filament will glow brightly. Wavemeters will register at a distance of 50 feet from the instrument and radiometers will revolve, yet the current is imperceptible except as the very mildest warmth. Because of its ionizing power, the radio will illuminate a neon lamp without electrical connection, discharge an electroscope and render the spark-gap of an electrostatic machine (Holtz or Wimshurst) a good conductor, thus suppressing the spark. By reducing the size of the condenser electrodes, it is possible to produce enough heat in a very small area to coagulate albumin.

We have received a number of reports from physicians testing this apparatus, but they are not in a form acceptable to medical readers. The following few personal experiences are submitted as suggestive:

Case Reports

Case 1.—Male, age 59, had an acute dental abscess in the upper right bicuspid, with a fistula, about ten years ago. The tooth was treated and later extracted about two years ago, since when the abscess recurred following the fitting of a plate and became pronounced about two weeks before he presented himself for treatment. This fistula, during this time, had opened and closed several times.

One week before I saw him the upper jaw became painful, very tender and throbbing. There was considerable swelling, extending

to the side of the face. The right submaxillary gland was swollen to the size of a kidney bean and was very tender to touch and painful. The fistula was not discharging.

Treatment: The dental plate was removed and two applications of ten minutes each were made, on successive days, using about 3-meter waves at 200 milliamperes in the treatment circuit. The condenser electrodes, or rather applicators, were of tubular glass, about 3 inches long, one placed directly upon the swollen gum and the other on the skin above the inflamed gland.

Improvement was noted within six hours and all symptoms, including the adenitis, were gone in twenty-four hours. Two further applications were made as a precaution. The patient reported three months later, with the jaw apparently well and sound.

About two months subsequently, the patient reported with a periapical abscess of the left upper central incisor, of three days' duration. There was a large gum boil, the incisor tooth was quite loose, and there was a moderate submaxillary abscess of the left side.

Treatment: The plate was removed and the same treatment as previously given was applied for twenty minutes, with a 4-meter wave.

Six treatments, on successive days, removed all symptoms except that the tooth was still loose, but not so mobile as before. The patient was warned not to bite anything solid and against testing the mobility of the tooth with his fingers.

Medication during treatments was four grains of thyroid extract daily. The patient is still under observation and treatment.

A thermometer, placed on the gum after each treatment, failed to register any rise above normal blood temperature.

Case 2.—A male, aged 60 years, had had prostatic symptoms dating back about one year, with frequent urination (about every hour during the day and two or three times between eleven P.M. and four A.M.) and difficulty in starting the flow, which was without force and dribbled.

The prostate was soft, slightly enlarged, not tender. The patient was otherwise healthy, not overweight and had no venereal history. The blood pressure was 140/90.

Treatment: The 3-inch applicators of tubular glass were placed, one in the rectum, the other upon the skin over the bladder, and a $2\frac{1}{2}$ -meter wave treatment was used for fifteen minutes daily. No heat was perceptible.

After three treatments the patient reported improvement in symptoms: The stream was more forceful, morning erections returned, and he is disturbed only once at night, about 4:30 A.M.

After two more treatments the patient discontinued coming for one month. When he returned he reported that the improvement had been maintained. The intervals between urination had prolonged, and he is disturbed at night only occasionally, when he partakes of liquids just before retiring. His general appearance was much improved, which he ascribed to obtaining undisturbed rest at night.

As a precaution, three more treatments were given.

A number (14) of cases of acute gonococcal epididymitis, were seen and treated in a hospital dispensary. They will be reported in due time in *extenso*. Here flexible plaque condenser applicators (3½ by 3½ inches) were used, with the inflamed organ in the field between them. The energy varied between 7½ and 20 watts and the average wave length was 4 meters, with 200 to 400 milliamperes in the treatment circuit. Following the local treatment of 20 minutes, the applicators were moved and placed, one over the spine above the upper splanchnic nerve center and the other over the epigastrium, for a ten-minute systemic treatment. This procedure was followed daily.

In these cases some heat was perceived in the testicle during the local treatment. Immediate relief from pain was the rule. The patients often fell asleep during the treatment and there was a rapid subsidence of the temperature, in some cases from 105°F. to normal in one hour following the first treatment.

The systemic effect was also noted in the necessity for some patients to urinate during and immediately after treatment. Recovery was remarkably prompt—a matter of three or four days in the hospital.

Many of these patients had previously been treated by diathermy and other local applications of heat or medicaments.

Figure 2 shows a solenoid-like belt, on which standing waves of two meters can be demonstrated. It is a combined conductance and capacitance applicator. It is possible to shift the nodal point to any position on the body to secure maximum resonance within a special locality.

In addition to the advantage of being able to tune the apparatus to the desired treatment wavelength, another remarkable innovation has been accomplished; namely, a meter for dose measurement. This is shown in

Fig. 2, and is a combined thermo-milliamperemeter and condenser applicator, reading the energy directly at the location of the application on the surface. It does not tell the efficacy nor strength of the treatment, but merely affords a datum for information and comparison of various treatments at different times and in different locations. In this way, for the first time, it is possible to accurately duplicate treatments. The dosimeter applicator is shown in use in the illustration.

References

- 1.—Saidman, J., et Cahan, R.: Les Ondes Courtes en Therapeutique (Short Waves in Therapeutics). *Annales de l'Institut d'Actinologie*, 5:1-135 (Aug.), 1931.
- 2.—Davison, H. M., Lowance, M. I., and Barnett, C. F.: Hyperpyrexia in General Medicine. *CLIN. MED. AND SURG.*, 42:545 (Nov.), 1935.
- 3.—D'Arsonval, A.: Action Physiologique et Therapeutique des Courants à Haute Frequence (The Physiologic and Therapeutic Action of High-Frequency Currents). *Annales de l'Institut d'Actinologie*, 5:85-86 (Aug.), 1933.
- 4.—Liebesny, P.: "Kurz- und Ultrakurzwellen (Biologie und Therapie)." (Short and Ultrashort Waves). Urban & Schwarzenberg, Vienna, 1935.
- 5.—Meyer, J.: Les Ondes Courtes à Vienne. (The Short Waves in Vienna; a Visit to Dr. Liebesny's Laboratory). *Annales de l'Institut d'Actinologie*, 10:6 (October), 1935.
- 6.—Weissenberg, E.: Irradiations de Haute Frequence d'Intensité Faible. (High Frequency Irradiations of Feeble Intensity) from the laboratory for short waves in the psychiatric and neurologic clinic of Vienna, Prof. Dr. Potzl, director. *Annales de l'Institut d'Actinologie*, 10:9 (October), 1935.
- 7.—Steibock, L. H.: The Fundamentals and Indications of Short-Wave Therapy, Fulguration and Coagulation. *Arch. Phys. Ther., X-Ray, Rad.*, 11:657-661 (Nov.), 1935.
- 8.—Hallberg, J. H.: Demonstration of Wave Measurements. *Phys. Ther.*, 47:29 (Jan.), 1929.
- 9.—Woodbury, F. T.: Therapy with High-Frequency Electromagnetic Energy. *Phys. Ther.*, 47:37 (Jan.), 1929.
- 10.—Schliephake, E.: "Short-Wave Therapy." English Translation by R. King Brown. The Actinic Press, London, 1935.
- 11.—Reiter, T.: Recherches sur les Ondes Ultra Courtes. (Investigations of Ultra-short Waves). *Annales de l'Institut d'Actinologie*, 7:195-198 (Oct.-Nov.), 1932.

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NOTES AND ABSTRACTS

Fever Therapy

WHILE it is very generally understood among magazine readers today, that editors cannot assume responsibility for the opinions of all the authors whose writings they publish, it sometimes happens that, although readers are entitled to be made acquainted with the various aspects of controversial subjects, the editor may feel it necessary to express his personal dissent with some of the opinions expressed.

Fever therapy can no longer be considered a new method of treatment, for although studies are still going on to determine the best and safest way of raising the tempera-

ture of the body, there is now sufficient evidence of the value of such treatments, in certain cases, to place them on the list of accepted therapeutic procedures. Moreover, while certain means for producing remedial fever are still so complicated and potentially dangerous that they should be used only under hospital supervision (as Dr. Waddington suggests in our January issue), there are others which are perfectly safe and satisfactory for employment in a well-equipped and properly-staffed office (as witnessed by the article of Dr. Davison *et al* in our November issue, page 545), or even in the patient's home (as implied in one paragraph of the

article by Woodbury and Hallberg, in this issue).

It is, therefore, in our opinion, an error to speak of fever therapy in general as "herbic treatment," or state that it is, under all conditions, a "decidedly hospital procedure."

With modern appliances available, the physician who will make his choice of apparatus for inducing fever intelligently and prepare himself to use such apparatus with discrimination and judgment, will be laying foundations for the higher type of professional and economic success.

G. B. L.

Get all you pay for. Read and use the ads.

Radium in Perlèche

AFTER trying many remedies unsuccessfully, in the treatment of perlèche, I have found that a half-strength plaque of radium, with no filtration, applied for 5 minutes, causes a slight erythema, following which, in many cases, the lesion heals completely.—Dr. Wm. J. MacDONALD, in *Urol. & Cutan. Rev.*, Dec., 1935.

BOOKS

Wolf: Electrotherapy

SHORT-WAVE THERAPY AND GENERAL ELECTRO-THERAPY (Illustrated). By Heinrich Wolf, M.D. New York City: Modern Medical Press. 1935. Price, \$2.50.

Dr. Wolf, who is eminently qualified because of his long experience, both abroad and in the United States, in the study and practice of physical therapy, has presented to the medical reader a primer for beginners. As an introduction to this form of practice, it will be a boon, not only imparting correct information, but, what is most important, preventing misconceptions and accidents.

In the compass of 96 pages, with a minimum of text and a maximum of illustration, to which is appended a most excellent index, itself a guide to treatment, Dr. Wolf has presented a sturdy framework upon which the practice of physical therapeutics can be satisfactorily built.

We believe the book will enjoy many editions, wherein certain minor defects in spelling will be corrected, some statements renovated and some omissions supplied. We suggest also, owing to the general unacquaintance of the medical profession with the

technical terms of physics, a careful scientific nomenclature be adopted and explained, to avoid confusion.

F. T. W.

Law: The Nasal Sinuses

NASAL ACCESSORY SINUSES. Roentgenologically Considered. By Frederick M. Law, M.D., Roentgenologist, Manhattan Eye, Ear and Throat Hospital, New York. With One Hundred and Ninety-Seven Roentgenologic Studies, Twenty-Eight Clinical Illustrations and Three Key Plates. New York: Paul B. Hoeber, Inc. 1935. Price, \$10.00.

This magnificent atlas of the study and diagnosis of the nasal accessory sinuses is a worthy member of the masterly series of roentgenologic monographs of which it is a member. Printed throughout on heavy plate paper, every picture, particularly the roentgenograms, is reproduced as accurately as modern methods of engraving and printing permit, so that actual films can be intelligently compared with these halftones. The typography of the text is exceptionally clear and beautiful; the binding is solid and dignified—made for hard daily use.

No roentgenologist can be a specialist in all lines, and this book will make a practically satisfactory substitute for a postgraduate course or frequent consultations with experts. It successfully explains the needs and work of the roentgenologist and the rhinologist, coordinates them, and makes each intelligible and helpful to the other. No member of either of these specialties can afford to deny himself the practical assistance which this book can give him. It is not intended for general clinicians, though many of them will profit by studying it.

NEWS

International Congress of Physical Medicine

THE Sixth International Congress of Physical Medicine will be held at London, Eng., May 12 to 16, inclusive, 1936.

The Congress will be divided into six sections: (1) Kinesitherapy; (2) physical education; (3) hydrotherapy and climatotherapy; (4) electrotherapy; (5) actinotherapy; (6) radio therapy and radium therapy.

Among the important subjects to be discussed will be: Short-wave high-frequency electrical currents; the production of pyrexia by physical methods; sun bathing for the sick and the well; remedial exercises in the treatment of the sick; and others.

For further information, address Dr. Albert Eidonow, 4 Upper Wimpole St., London. W. 1., England.

PROCTOLOGY



ASSOCIATE EDITOR

WILLIAM A. HINCKLE, M.D., Peoria, Ill.

Eczema about the Anus

By Charles J. Drueck, M.D., Chicago

BEFORE beginning treatment of the eczema, it is essential that careful study be made of any possible constitutional as well as local causes, because, while a few cases are due to purely local irritants, it is generally accepted that most cases, for success of any permanency, demand both constitutional and local treatment.

Constitutional Management

This does not necessarily always mean medicinal treatment, for often attention to diet and other hygienic considerations is more potent than drugs. Every organ should be interrogated to ascertain if its functions are properly performed, and the patient's occupation and habits should be minutely inquired into, since these often have an important bearing upon the origin of his disease. His previous medical history should be carefully gone over, this being an especially important matter as showing the patient's pathologic tendencies.

As there is no single specific cause of eczema, so there is no specific remedy for it. The internal treatment is directed, not so much against the eczema as against those derangements of special organs, or of the general economy, which act as favoring causes of the cutaneous disease.

The diet must be regulated according to the circumstances of each case. In robust, well-nourished individuals who frequently overeat, taking an excess of rich food, more or less restriction of the quantity and quality of the food will frequently be advantageous; while those whose constitution is under the normal will be benefited by an increase in the amount of food taken, provided it is of a kind easily digested and readily assimilated.

Certain articles of diet, such as pork, cheese, shell-fish (except oysters), fried dishes, gravies, sauce, pickles, condiments and raw fruits should be denied. The possible presence of a protein hypersensitiveness should

be kept in mind, and its presence or absence determined by a detailed study of the patient's diet, or by the employment of cutaneous tests. If present, such foods as produce an anaphylactic reaction should, as far as possible, be rigidly excluded from the diet. Tea and coffee should be avoided and also alcoholic drinks, except in elderly individuals, who, if they have been accustomed to their use, may be allowed moderate amounts, whiskey being the least objectionable and beer and sweet wines the most hurtful. Alkaline waters, such as Vichy, may often be used with advantage, especially in the plethoric and in those with gouty tendencies. Tobacco should be prohibited. An ample diet is found with beef, mutton, poultry and green vegetables; potatoes and white bread being taken in moderation, especially where there is faulty starch digestion. The value of water, not during meals but between times, is not fully appreciated. A full glass of water, half an hour before each meal, promotes elimination through the kidneys.

An analysis of the stomach contents is always advisable. Excess gastric acidity is sometimes a factor requiring sodium bicarbonate; or there may be a fermentative tendency, in which sodium benzoate, 10 to 20 grains (0.65 to 1.3 Gm.), three times daily, alone or associated with a bitter tonic, will prove of benefit; and in still other cases hydrochloric acid, perhaps with pepsin or pancreatin, is needed. Hyperacidity will, however, be found much more often than hypoacidity.

Where there is a deficiency of hepatic function a laxative dose of calomel (one grain, in divided doses), together with sodium bicarbonate or chalk, given two or three times weekly, will exert a favorable influence upon the disease.

In many instances there is a disturbance of digestion in which constipation seems to be a feature. In these patients the daily or occasional administration of a laxative, along with

an ordinary tonic digestive mixture, will aid recovery. As a rule the laxatives, such as magnesium sulphate, sodium phosphate or saline aperient mineral waters, are of much service. The following prescription has proved valuable in these cases:

℞ Magnesii sulph.oz. 1— 30.00
 Ferri sulph.gr. 4— 0.25
 Ac. sulphuric, dil.dr. 1— 4.00
 Aquae menth. pip. qs.
 ad.oz. 4—120.00

Sig.: One tablespoonful in a tumblerful of water, one-half hour before breakfast.

The dose may be modified to suit the individual patient.

When a disturbing colitis complicates the picture, the salines had better be excluded and the following substituted:

℞ Sodii salicyl.dr. 1— 4.00
 Ext. cascara. sag.dr. 1— 4.00
 Tr. Nucis Vomicae.dr. 2— 8.00
 Tr. Gentiani.oz. 3—90.00

Sig.: One teaspoonful before each meal.

When the itching is severe and continuous, the use of some one of the coal-tar analgesics will occasionally afford a certain degree of relief. Phenacetin is one of the best and least harmful and is often distinctly useful when the continuous itching makes sleep impossible. Extract of cannabis indica, in full doses, either alone or combined with hyoscyamus, is likewise occasionally useful for the relief of itching. Opium and its alkaloids should not be given for this purpose, since in many individuals they produce itching and the temporary relief is followed by an increase in the itching as the effects of the drug wear off.

Topical Treatment

Many external irritants are to be thought of. The patient's underwear should have attention. Woolen and rayon undergarments often irritate the sound skin and should never be worn next to the skin in individuals with eczema. If for any reason it is deemed necessary that wool be worn, a thin cotton gauze or silk garment should be worn underneath it. All rough edges about the underwear should be carefully looked after.

The local treatment of eczema is required in all cases. The affected parts must be cleansed of all discharges, crusts and scales, and of all dirt, by gently wiping the surface with cold cream or vaseline. Soap and water should be avoided. In the early stages, marked by acute inflammatory changes, lotions will be found most satisfactory, partly because of the cooling effect produced by evaporation.

In the acute inflammatory cases (erythematous and vesicular), in which there is no epidermic thickening, mild applications alone

should be used; zinc oxide ointment is probably the best, or a dusting powder of talcum, zinc oxide and boric acid, equal parts. Dabbing the parts several times daily with a saturated solution of boric acid is especially valuable, probably for its mild antiseptic action¹. When the itching and burning are distressing, this may be modified to:

℞ Menthol.gr. 4— 0.25
 Glycerin.dr. 1— 4.00
 Boric ac., sat. solu. qs.oz. 4—120.00

Sig.: Dab on frequently.

Because the opposing cheeks of the buttocks retain secretions, applications composed of inorganic material, such as zinc oxide, bismuth subcarbonate and talcum, are much to be preferred to preparations containing starch or lycopodium, as the latter are apt to become moist, undergo fermentation and act as irritants. To any of these dusting powders, small quantities (1 percent) of carbolic acid or menthol may be added, to allay itching. The use of powders should always be preceded by spraying with a lotion and they should be liberally applied and often.

In the subacute or moderately inflammatory type, in which there is infiltration and thickening of the skin, tar in its various forms has long been regarded as one of the most useful local remedies. If is often, however, a most uncertain remedy, disagreeing at times in cases in which it seems to be plainly indicated.

℞ Liquor Carbonis detergens²oz. 1—30.00
 Glycerin.dr. 1— 4.00
 Phenolisdr. ½— 2.00
 Liq. Calcis.
 Aquae.aa. qs. oz. 2—60.00

Sig.: Shake thoroughly and mop on three or four times daily. This lotion may be modified by substituting menthol gr. 2 (125 mg.) for the phenol and by using *aqua camphorae* in place of the lime water. It is especially useful in the dry forms, particularly the papular, but sometimes irritates when the surface is raw and oozing.

In the later stages, when the inflammation has to a considerable degree subsided, but

1.—Klotz: The Principles of Antiseptics in the treatment of Eczema. *Journ. Cutan. Dis.*, 1894, p. 99.

2.—Liquor carbonis detergens is a proprietary coal-tar preparation, made by Wright & Co., London; it is essentially a solution of coal tar in soap-bark tincture. Stelwagon ("Diseases of the Skin," p. 289) recommends a substitute made as follows: Coal-tar, 4 parts; strong soap-bark tincture, 9 parts; digest for eight days, frequently shaking and stirring, and finally filtering. The soap-bark tincture is made of 1 pound soap-bark to 1 gallon of 95-percent alcohol, digesting for a week.

the skin is somewhat red and covered with scales and crusts, and when itching is still a prominent symptom, mild stimulating ointments are indicated. Ten (10) grains of calomel or ammoniated mercury, to the ounce of lanolin, may be used, especially when there is dry scaling with considerable itching. An ointment containing resorcin is likewise often most useful.

R Resorcin.	gr. 20—	1.30
Bismuth. subcarb.	dr. 2—	8.00
Glycerin.	dr. 1—	4.00
Aq. Rosae.	qs. oz. 4—	120.00

Great care is always necessary at this stage to avoid irritating the skin and relighting the inflammation by the employment of too-stimulating ointments. A very important preliminary, frequently necessary in chronic cases,

is the removal of crusts and scales, which are often present in considerable quantity, and unless removed make applications of any sort useless, since they protect the diseased skin beneath. Such crusts may usually be removed by the liberal application of olive oil or vaseline.

Not uncommonly a vaginal discharge is the causative agent and requires attention first.

For the relief of pruritus within the anus, ointments made up with lanolin should be used, as the ordinary fatty bases, not mixing with water, are comparatively ineffective upon moist mucous surfaces. In cases which have resisted the ordinary local applications, the x-rays may be tried. Their destructive action on the terminal nerve filaments sometimes affords marked relief, but the effect is not permanent.

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NOTES AND ABSTRACTS

Hydrochloric Acid in Pruritus Ani

IN the comment on the report of a case of pruritus ani, by Dr. T. H. Maday, in the November issue of "C. M. & S." (page 556), it is said that I have recommended the intravenous injection of hydrochloric acid for this infection. I regret to say that this is an error. While I have seen some cases improve in the most annoying manifestations of this infection, under the influence of the intravenous injection of the acid, the results have not been nearly so positive as those after its local injection.

Patients in Alabama are not quite so heroic as the one described by Dr. Maday. As a matter of fact, I have never known one whose fortitude was such that he could or would stand the pain, which must have been exquisite. All this discomfort is obviated by the injection of 1-percent Novocain (procaine), through two or three needles, which are left in place and, after five minutes, followed by the injection of the acid. In this procedure I use hydrochloric acid C. P., 1:250—that is 4 cc. of hydrochloric acid to a liter of triple-distilled water.

As a preliminary or preparatory measure, it will be found that a daily enema of hydrochloric acid, 1:500 or 1:1,000, one or two quarts in amount, will sometimes obviate the necessity for the local injection of the acid. The chlorine of hydrochloric acid is easily liberated, and this gas has been known for many years as the most potent of all relatively non-toxic agents in the destruction of germs, but until I began its use in all

foci that could be reached, I had never before seen a preparation from which one might see the same clinical results that one may see with the use of this acid in infected wounds, ulcers and all foci of infection that can be reached by drops, irrigations or wet dressings.

In February, 1935, through the kindness of Dr. Stuart Graves, dean of the Medical Department, University of Alabama, Dr. Ralph McBurney found that 1:250 hydrochloric acid will kill the *Streptococcus hemolyticus* and the *Staphylococcus aureus*, in a pure culture, in one hour. Metchnikoff found, in the Pasteur Institute, more than a generation ago, that the hydrochloric acid of the gastric juice will kill the tubercle and anthrax organisms after prolonged exposure.

In closing, I highly recommend enemas of hydrochloric acid in pruritus and in infections about the anus or rectum.

BURR FERGUSON, M.D.

Birmingham, Ala.

Hands Contaminated in Amebiasis*

AMONG the by-products of Chicago's Century of Progress, was an unprecedented interest in amebic colitis. For the first time the public was made dysentery-conscious. New possibilities of transmission were discovered.

Now come Spector and her collaborators with a report showing that, under certain conditions, the causative microorganism may

**Pub. Health Rep.*, Feb. 8, 1935.

be found upon the hands of carriers. After evacuations and anal cleansing with toilet paper, the hands of 74 carriers were examined. The hands were washed in sterile water or saline and the nails carefully cleaned and trimmed. These washings and parings were then centrifuged and the sediment examined for the determination of cysts and their viability. Endo plates were also made from the washings in 54 cases. Of the 74 examined, the washings of 5 (6.8 percent) were positive. Of the 54 that were cultured on endo-mediums, 15 (27.7 percent) were positive.

W. A. H.

The Pecten Band

TO those who have expressed a desire for more information concerning pectenosis, of which I wrote in the April number of *CLINICAL MEDICINE AND SURGERY*, I would recommend especially the following:

Miles: Observations on Internal Piles. *Surg. Gyn. & Obst.*, 1919, XXIX, p. 497.

Abel: The Pecten: The Pecten Band: Pectenosis and Pectenotomy. *The Lancet*, (Lond.), April 2, 1932, p. 714. (Abst. in "C. M. & S." Feb., 1933, p. 123).

Morgan: Pectenosis and Minor Maladies of the Anal Region. *Surg. Gyn. Obst.*, Nov., 1934, p. 806.

Meckling: Some Comments on Pectenosis. *Trans. Amer. Proct. Soc.*, 1933, p. 41.

W. A. H.

Treating Hemorrhoids by Electricity

RANSON L. BLANCHO, writing in the *Journal of the Philippine Islands Medical Asso.*, for October, 1934, is enthusiastic over his results in 9 cases of hemorrhoids treated by electrocoagulation. He uses the bipolar or D'Arsonval current. The indifferent electrode is applied over the abdomen or under the buttocks. The hemorrhoidal area is anesthetized with 1-percent procaine. A fine, straight needle, held by an insulated handle, is inserted into the hemorrhoidal tissue. With a foot switch the current is turned on until the entire area to be removed is blanched. The current is then turned off and the needle removed. The patient is allowed to go about his usual vocation. Aside from a little mineral oil and local cleanliness, no after-attention is necessary. In a few days the pile tissue sloughs off, leaving a clean, granulating surface, which heals readily. In about a fortnight the patient is well.

He advises this as the method of choice. "No other procedure is so simple, so effective, so economical and so nearly faultless."

W. A. H.

Distensibility of the Rectum

IN the *American Journal of Surgery* for September, 1935, Dr. David A. Kraker, of Newark, N. J., and Dr. Arthur W. Wyker, of Bloomfield, N. J., report two astonishing cases which illustrate the degree to which the rectum can be distended without causing serious injury.

In Dr. Kraker's case, the foreign body was a half-pint whisky flask, with a piece of curtain cord tied around the neck and a hook of heavy wire inserted in the neck, apparently for the purpose of removing the bottle.

In Dr. Wyker's case the objects found in the rectum were a three-ounce jar of cold cream, with a large, whole lemon resting in its neck. In this case the patient stated that this was the way he carried out a druggist's suggestion that he use cold cream and lemon juice for the treatment of piles.

Both of these men were middle-aged, and there was reason to believe that these objects, which were removed surgically without any untoward results, had been inserted to obtain perverse sexual gratification.

The Intestinal Toxemia Syndrome*

MILLS, of the department of experimental medicine, University of Cincinnati, is quite enthusiastic about the use of kaolin in the treatment of intestinal toxemia. He summarizes his observations as follows:

A close association seems to exist between oral and colonic hygiene. Putrefactive activity in the colon seems to result in halitosis, excessive tartar deposit and lowered vitality of the gingival tissues. The suggestion is made that this effect may even extend to the teeth and be the basis of much caries.

Intestinal putrefaction is also at the basis of many cases of acne, and the elimination of such putrefaction often brings most rapid and complete disappearance of even the most severe pustular eruptions.

It is suggested that these oral and skin troubles result from the excretion, through the saliva and sweat glands, of the putrefactive products absorbed into the blood from the colon.

The most rapid and certain treatment for intestinal putrefaction is kaolin, administered in a syrupy suspension. This preparation has the added value of low cost, which is important in this type of disturbance that usually requires continued treatment for years.

The formula he recommends is:

Kaolin oz. 6 180.0

Water oz. 4 120.0

Syrup. simplex, q. s. ad. oz. 12 360.0

Dose: Half an ounce twice a day, before meals.

*J. Lab. and Clin. Med., May, 1935.

A LIVING FOR THE DOCTOR

(The BUSINESS of Medicine)

The Rural Practitioner

SURVEYS seem to be the order of the day, not only in commercial pursuits, but also in medicine. If we believe the surveyors, there are sections, populated to a fair extent, in which there are no medical practitioners for miles. But the surveys have gone further; they found that there were medical men in these localities at one time, but that they have migrated to urban centers.

It is true that rural districts are not attractive, except for a few weeks in the year—long, cold drives, many of them at night, through all kinds of weather; a limited social life; working conditions sadly handicapped on account of having no hospital facilities nor the help of more skilled men, when these are needed. The young man, who has spent five or six years in the city in preparing himself for his vocation, does not want to return to the country and, if he does so, it is only a short time before he is eager to return to the city, where the profession is sadly overcrowded.

As a rural practitioner for many years, I have felt I was an important cog in the community. By attendance at medical societies and through journals, I have tried to keep up with the times and give the people the best there was in me. But they say this is a new age—that things have changed—yet man is the same as he was thousands of years ago, as far as his physical body is concerned. There are no new diseases; merely we have a better understanding of them and new methods for their management.

Diseases may be organic (those that have a definite pathologic basis) or functional, where, of course, there is a cause, but at times it is very obscure. Since the dawn of Medicine, investigators have been looking for these causes. It is with a smile that the older members of the profession look back on some of the causes advanced. Some have survived, but a vast number have passed into oblivion, at times much to the detriment of both physician and patient.

Now the statement is being widely made that 90 percent of illness can be treated by the general practitioner with his little black bag; and a Kansas City pathologist, who carefully examined 1,000 removed tonsils, recently

reported the discovery that 970 were normal.

On every hand we hear that State Medicine is surely coming—one of the greatest mistakes that can ever be thrust on an already suffering humanity. Who is at fault? I venture to answer, the physicians themselves. There has been too much theory, with unnecessary expense to the patient in fully 90 percent of all illnesses. I am not going to offer a panacea or anything new; but as man has been compared to an automobile, let us look to his nutrition when he is ill, the same as we would to the gas, oil or electricity when a car fails to function normally. The human body needs many different forms of nutrition, for the blood, the bones and the nerve cells. Analyzing these from the standpoint of the physiologist, it is found that the daily requirements of perfect action include iron, $\frac{1}{4}$ grain; calcium, about 12 grains; and phosphorus, about 20 grains. The latter amount shows how valuable this chemical is as a nutrient.

I do not decry the laboratory, but I insist that it is not necessary to examine every one of the over 20 billion cells that go to make up the human body, to find the cause in every case of functional illness. If an automobile squeaks or refuses to start, is it necessary that every nut and bolt be removed to ascertain the cause? It may be agreed that certain people will demand the most careful laboratory examination, but the "new age" has placed many of them, especially in the rural communities, in a position where they cannot go to large clinical centers for examination, but must depend upon their family physicians.

Study of the Urine

The urine should be looked on as one of the most important secretions and excretions of the human body, and with very few exceptions its examination should be routine in every case. This is a procedure that can be carried out by any physician. The average physician may not be able to differentiate epithelioma from normal cells of the bladder, ureter, pelvis or tubules, but he can ascertain inflammatory reactions, intestinal fermentations and anemia, and can definitely gage

the nervous system, as to its reserve nutrition, especially phosphorus and calcium.

Briefly, inflammation along the urinary tract is always accompanied by pus in the urine. If a sample from a male is passed in two glasses and both are cloudy, the source of the pus is from behind the compressor muscle—in the bladder, ureters or kidneys. Albumin, in the absence of pus, blood, prostatic fluid or casts, is often caused by anemia. From hundreds of examinations, where the chart was used as a check, the giving of iron (I always use the old Bashams' mixture) proved the diagnosis correct, by relieving the patient quickly.

Indican in excess shows intestinal fermentation or a greatly increased nerve-cell metabolism. The phosphatic index will show, at once, the condition of nerve-cell nutrition and how it is being used. Fully 80 percent of the American people today are suffering from nerve-cell depletion or hunger. The phosphatometer will show to what extent phosphorus nutrition is defective; and it goes a step further, because the appearance of the crystals will show if the case is hysterical; if degeneration is present in the cells; or if pregnancy, between the third week and end of the third month of gestation, is present.

In conclusion, it may be stated (omitting general financial conditions) that both the physician and (especially) the people themselves are responsible for the present state of medical practice—the physician, for absorbing without proper consideration, every new theory that is handed him; and the people, for their manner of living, and for accepting the "take you all apart" procedure which is so often advised. A few minutes spent in studying the urine, to determine the state of nutrition, especially nerve-cell metabolism, will give more information as to the cause of a good many functional disorders which can be quickly rectified, than will a week



Courtesy, Bulletin Kentucky Dept. of Health.

under the observation of the average specialist, many of whom will find the cause in their own chosen fields and advise an operation.

The general practitioner is not going to be cast into oblivion; but he must give his patients a reasonable chance of recovery, at a price they will be able to pay.

BION E. SMITH, M.D.

Angola, N. Y.

Get all you pay for. Read and use the ads.

I have taken CLINICAL MEDICINE AND SURGERY since 1898, and like wine it has grown better with age. Now it is chuck full of practical information for the doctor.—J. R. L., M.D., Calif.

Inflation and Investment Trusts

ALL of the leading commentators on economic and political matters, including the well known Roger Babson, assure us that inflation of credit or currency or both is inescapable and imminent in this country.

Inflation means rising prices of all commodities—food, clothing and all other necessities—and also of stocks, and falling prices of bonds. In other words, a dollar, today,

is worth more (that is, will buy more goods) than it will be when inflation is in full swing.

I do not intend to take the position of advising anybody to do anything, but merely suggest, to thoughtful physicians, that they look into this matter of inflation carefully, and, if the available evidence seems strong enough, that they do what they can to protect themselves against it.

The simplest thing to be done is to buy, now, while the purchasing power of the dollar is relatively high, such things as are now needed or will be needed during the next year, even if one has to go into debt to do so.

Those who have a good deal of money to invest, probably have brokers to advise them, and will, very likely, be told to buy sound stocks.

Those who have a little money to invest, but not enough to diversify their stock holdings sufficiently to protect themselves, will do well to look into the matter of Investment Trusts, chiefly of the management type, rather than the fixed type, where they can purchase a part-interest in a wide variety of sound stocks, and thus share in any rise in their prices which may take place.

I sincerely hope that no one will take any action (except to investigate the situation) because I have suggested it. I am certainly no financial expert, though I have looked into these matters somewhat. My meager researches have convinced me that, under present conditions, there is no place where idle money will be unquestionably safe, and merely being alive in these days means taking chances. I may be wrong about all these things; but I have thought about them and am doing the best I can to meet the circumstances, and I cannot help feeling that other physicians should do some thinking along these lines also.

GEORGE B. LAKE, M.D.

Waukegan, Ill.

BOOKS

Oppenheimer: Medical Jurisprudence

A TREATISE ON MEDICAL JURISPRUDENCE. By Benton S. Oppenheimer, LL.B., LL.M., of the Cincinnati Bar; Professor of Law, College of Law, University of Cincinnati; Professor of Medical Jurisprudence, College of Medicine, University of Cincinnati. Baltimore: William Wood & Company. 1935. Price, \$4.00.

This is a concise handbook, such as all physicians need for frequent reference, so that one may know one's legal relations to his patients and avoid trouble.

Based on his own long experience in the practice of law, and thirty years of teaching students at the law school and college of medicine of the University of Cincinnati, the author has evolved a concise well-authenticated textbook and reference work very suitable for physicians, lawyers, and students. The many illustrative cases and citations are of special value. The book will help all who are likely to be confronted with medico-legal problems, and familiarity with its contents will enable physicians to avoid unpleasant complications.

There is a complete chapter explaining malpractice, such as failure to make a proper diagnosis, or to take x-ray pictures, or to remove foreign substances, or to secure consent to operation; also liability for negligence of other physicians; a brief chapter on Actions and the nature and form of procedure; a chapter on Evidence includes the meaning and admissibility of expert testimony, qualifications, right to expert's fees, privileged communications, etc.; there is another chapter on liabilities of hospitals. Other subjects covered are dying declarations, physician's right to compensation, right to perform autopsy, etc.

TAX FACTS

Politicians slyly try to make working folks believe that only the rich pay taxes.

More cigarets are smoked by the poor than by the wealthy. Every time you pay a quarter for two packages of cigarets, you pay 12 cents in taxes to the federal government. Washington actually gets more than the manufacturer who produces the cigarets. Were there no taxes, cigarets would cost you only about half as much.

One tobacco company alone, not the country's largest, paid the federal government \$142,241,267 in taxes during the past eight and one-half years. This was six and one-half times the total wage bill for the same period.

In 1900 the government collected from cigaret taxes only \$3,969,191. During the year ended June 30, 1934, the tax toll was \$350,299,422—an increase of 8,725 percent.

Only the rich pay taxes?

Poppycock!

—A NOTED FINANCIAL WRITER.

THE SEMINAR

"A MONTHLY POSTGRADUATE COURSE"

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.)

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Ill.)

Problem No. 12 (Surgical)

Presented by Dr. Gustavus M. Blech, Chicago
(See CLIN. MED. & SURG., Dec., 1935, p. 613)

RECAPITULATION: A robust young woman of 19 years, who had had what was called a mild attack of appendicitis two years previously, suddenly developed complete stoppage of the bowel function, with great distention of the abdomen and retention of urine, but with little or no pain, tenderness, nausea or rigidity. When seen with a view to operation for the relief of intestinal obstruction, she had passed neither feces nor flatus for 48 hours, even after the use of laxatives and enemas. She did not, however, give the appearance of grave illness.

A complete and careful physical examination and urinalysis showed nothing abnormal except the abdominal distention and slight paresis of the right leg.

Under pressure and reluctantly, she admitted that, on the night before the symptoms began, she had been thrown from a toboggan and had rolled some distance down hill.

Requirements: (1) Why were intestinal stoppage and tympanites rejected as indications for laparotomy? (2) With the limited data at hand, what tentative diagnosis justified conservative treatment?

Discussion by Dr. E. C. Junger, Soldier, Ia.

This problem is interesting and illustrates the deceitfulness of objective symptoms, per se.

Dr. Blech asks, "Why were the intestinal stoppage and tympanites rejected as indications for laparotomy?" An abdomen, if calling for surgical attention, after 48 hours, shows tenderness, rigidity, perhaps a tumor mass in obstruction, and certainly fever, a rapid pulse, vomiting or shock.

Second query, "With the limited data at hand, what tentative diagnosis justified the

advice to pursue a conservative therapeutic course?" The partial paralysis of one limb and the temperature-sense disturbance, plus urinary bladder paresis, with a history of sustained trauma from a toboggan fall, would suggest injury to the spinal cord or nerve roots where they pass through the spinal foramina, which injury, if due to congestion or subdural hemorrhage, would clear up in due time.

Dr. Blech showed a wide-awake diagnostic acumen when refusing to be stampeded by his colleagues' diagnosis, and rare tact in eliciting the history of trauma. It is not always easy to differ in a consultation. Dr. Blech is to be congratulated on his generalship.

Solution by Dr. Blech

If the reader will visualize the general and special situation of the case, the problems will prove comparatively simple. Without in the least intending to criticize the two attending physicians, it became evident to me, after a cursory glance at the patient, that her whole appearance was out of keeping with the abdominal symptoms. In an organic obstruction we have, within forty-eight hours, quite another picture.

The first thought that suggested itself to me was hysteria—but only for a moment. Although the girl seemed to be worried, there were no stigmata justifying the assumption of a psychogenic neurosis. The moment it was seen that there was a slight paresis of the right leg, all doubts vanished as to the non-surgical nature of the tympanites and the accompanying urinary retention. The only question was whether we had to deal with a traumatic or an infectious central nervous lesion. The thought of possible acute anterior poliomyelitis, of mild grade and in the so-called preparalytic stage, did come up, but on reflection was rejected because the time element did not jibe. It was only when the patient admitted that she

had been thrown that I felt sure of an injury to the spine, even though physical examination had given no clue. In a city an x-ray examination would have been added, but even that would have proved of little if any help. The fact that the patient minimized the injury did not mislead me, for instinctively I felt that she had probably gone to the party without parental consent and was afraid of the consequences. I made the diagnosis of *hematomyelia*.

In the letter which reached me about two days after my return home, I was informed that the left leg, too, had become paretic. With rest and appropriate care the symptoms gradually abated within nine weeks, and a letter dated in August informs me that the patient is, to all intents and purposes, normal, except for a feeling of weakness in the muscles of the right leg. I anticipate a full recovery following a course of physical therapy treatment.

In conclusion, it is scarcely necessary to point out that the mild attack of appendicitis two years previously, probably was only colic due to intestinal fermentation, and at any rate has no bearing on the problem. The same holds good for the nausea, which would have had no pathognomonic significance, even if it had been more pronounced than it was.

Comments on Problem 11 (1935)

By Dr. G. W. Benitz,
Wathena, Kans.

ABOUT a week after sending in the problem, I was again called to see this patient for one of these attacks of pain, vomiting, cold skin and foul-smelling perspiration. His blood pressure at that time was 170/120. At this time there was a clear history of his having been to a "stag party," where 3.2-percent beer and cheap sandwiches were served and partaken of freely.

On December 23, 1935, he had another similar attack, but said that the only thing he could attribute it to was some home-made candy he had eaten the day before.

So far as I can see, the condition is due to an acute suppression of the kidney function, due to swelling of the kidney substance which is inclosed in an inelastic capsule. He does not complain of headaches or pain in the back of the head, as was added to the first article. A definite diagnosis and treatment are still in question.

[There is nothing in the history, as presented in "C. M. & S." for November, 1935, on page 562, to suggest the kidney condition now mentioned by Dr. Benitz; neither is the

connection between the "attacks" and alcohol at all clearly established. The symptoms still suggest a disturbance of the cardiovascular system.—Ed.]

Problem No. 2 (Medical)

Presented by Dr. Frank J. Stewart,
Stavely, Alberta, Can.

A WOMAN, aged 40 years, mother of one normal child of 15 years, had had two miscarriages, at 3 months, before the child was born, and one miscarriage after. Twelve years ago she had a septic abortion and hysterectomy; pelvic peritonitis followed, with drainage. Five years later she had a laparotomy, for low abdominal pain and backache; adhesions were broken down and the appendix removed. It was impossible, according to the operative record, to determine how much ovarian tissue was present, due to massive adhesions around the stump.

The family history is essentially negative. A Wassermann test of the patient and her husband was negative. The patient's blood pressure is 130/85. Physical examination, with the exception of a pulse rate of 104, was negative. The pelvis was negative for masses or tenderness; cervix fixed. Her height is 5 ft. 5 in.; weight (now) 127 pounds; her peak weight was 139 pounds, about 3 years ago; attention to diet and moderate restriction is all that is required to bring it down to 120. Appetite, good; elimination, not difficult to secure with liquid petrolatum or agar-agar; urine, negative. The artificial menopause has been complete since the first operation; no vaginal discharges.

This patient is a highly intelligent, but emotionally unstable person. She is an indefatigable worker in her household duties, and is not at all interested in social life of any kind. She is constantly tired, but her mental condition drives her through a tremendous amount of work each day, with the result that emotional outbursts are numerous at the end of it and sleep is light and easily disturbed.

Her complaints are vague—in her own words, as if she were suffering from an overwhelming intoxication with backache and extreme nervousness. In the past year she has begun to notice palpitation and weakness on overexertion. She fancies the "spells" are synchronous with the missing menstrual periods. She tends to become very melancholy at times when she considers her reproductive "deformity."

Requirement: Outline the management of this case, giving reasons for every suggested procedure.

CLINICAL NOTES and ABSTRACTS

Psychology in Medicine

THE affiliation of psychology to medicine is a very intimate one, and the fact that many medical men have been rather valuable contributors to psychology has long been known. Psychology has derived immeasurable benefit from researches carried on in clinics and hospitals, and within recent times medicine itself has been rather fortunate in gaining some insight into some of its problems through the activity of psychology investigators. Perhaps a notable instance in this line has been the valuable work of Strong on the effects of hookworm disease on mentality. Strong has demonstrated, in a quantitative way, a fact the physicians had long suspected; namely, that hookworm infestation retarded the mental development of its victims. This, of course, impressed us with the necessity for early treatment of hookworm sufferers and redoubled the activity of therapeutics in this direction.

Perhaps the earliest relation between psychology and medicine was through psychiatry. This is a branch of medicine that deals specifically with mental life, just as does psychology, with failures in the reaction at the psychology level. For this reason, perhaps, it is not surprising to find that early in the modern care of mental patients, psychologic laboratories were established as an integral part of the institutions leading in this field, and even at the present time a psychologist is still considered a necessary member of the staff of the modern mental hospital.

Another intimate relation between medicine and psychology is through psychotherapy. This science is essentially the treatment of disease by mental influences. At various periods in its development it bore a rather unsavory reputation. In the previous century, particularly, hypnotism was rather extensively used, and this seemed a fertile field for the faker and charlatan to exercise his talents. Within recent times, however, it has attracted men with scientific training and the right mental attitude, and has proved of real benefit in many instances. For instance, it was used before the development of anesthetics to produce surgical analgesia.

The treatment of disease by mental suggestion is by no means limited to hypnotism.

The recent researches of Cannon, of Harvard, Crile, of Cleveland, and Kempf, of Washington, show very clearly the relation between psychologic reactions and the physico-chemical reactions of metabolism. This is especially so in the case of the "emotionally-colored" psychologic reactions. Cannon has pointed out the relation between these factors in the mechanical and chemical processes of digestion, while Crile has brought out, in addition, the effects on the organs which he groups together as the kinetic system. All these investigations, taken together, demonstrate rather startlingly the fine balance maintained between the reactions at the psychologic level and the more vital life processes.

During the War, occupational therapy gained a great deal of attention because it was then utilized in dealing with numerous war disabilities. Instances where occupational treatment was most successful were found among those in which simple limb and joint movements were above the sensory-motor level of reaction and were supplemented by motivation and psychologic supervision. Here is a place where the dependence of the physician on the psychologist is rather striking. He must call him in, not as an assistant, but as an independent officer.

Perhaps another very subtle relation between psychology and medicine is that, in the practice of medicine itself, there is a play of psychologic reactions between the physician and the patient. Within the past several years, psychology has come to tell much of prejudices and biases, and it is essential that the physician should understand his therapeutic and diagnostic prejudices. He must, moreover, use his senses in diagnosis, and he must understand the many illusions of touch, sight and hearing.

Another wide application of psychology to medicine is, more specifically, to those medical specialties which involve an extensive range of special abilities. Psychologic tests can be devised and standardized for these as well as for typists, musicians, etc.

Medicine is more and more recognizing its social bearing. It is for this reason that psychology is coming to play a greater part in medical practice. In the prevention of disease,

as elsewhere in medical practice, psychologic factors are prominent considerations. By no means is psychology limited in its application to the mental reaction of the patient, but appears in almost every instance where physician and patient come in contact.

EDWARD PODOLSKY, M.D.

Brooklyn, N. Y.

Sacral Anesthesia in Obstetrics*

IN 1923 I began using Novocain (procaine) by the epidural route in rectal surgery. In doing perineorrhaphies and in surgery of the cervix uteri, this proved so satisfactory that

6.—The nagging pains before complete dilatation, so frequently complained of, are relieved.

7.—The action of the anesthetic lasts from two to two and one-half hours, depending upon the dose.

8.—It may be repeated.

9.—It improves the morale of the patient and inspires confidence.

10.—Administration is easy, quick and painless.

11.—The injection may be given to the patient while she is in her room.

12.—There are no pulmonary complications.

This method has been a routine at the

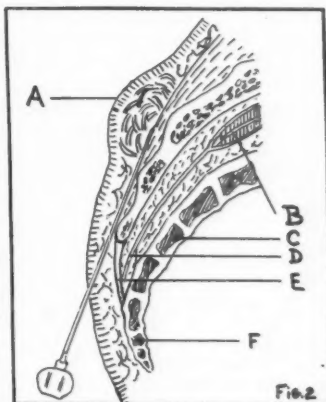
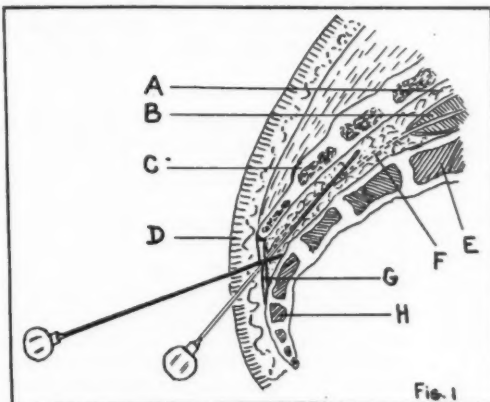


Fig. 1.—Correct position of needle. A. Sacral canal; B. Dural space (containing spinal fluid), which should not be wounded with the needle; C. Last sacral spine; D. Point of skin perforation; E. Sacrum; F. Filum terminalis; G. Dense ligament flavus or obturator membrane (when the needle perforates this structure a sense of "giving" is felt, at which time the change in the axis of the needle is executed); H. Coccyx. At left, the needle piercing G; At right, needle in correct position to inject the solution.

Fig. 2.—Wrong position of needle. A. Bulb of edema in subcuticular tissue caused by the solution being injected into the presacral structures; B. Dural space; C. Sacrum; D. Filum Terminalis; E. Obturator membrane; F. Coccyx.

I decided to try it in maternity cases. I have administered it in over 100 cases of obstetrics, without untoward effect in a single case. The advantages are:

1.—The action is essentially a local one exercised on the sacral nerves; in this respect it resembles the natural method of pressure anesthesia developed during delivery by the pressure of the fetal head on the sacral plexus.

2.—There is no toxicity to either mother or child.

3.—It shortens labor by relieving the pain, without interfering with either intrinsic or extrinsic forces.

4.—The mother, realizing that the pain is relieved, has no hesitancy in using her forces, knowing that the harder she works the sooner the labor will end.

5.—The perineum is relaxed and, under proper management, lacerations are almost unknown.

Lakeside Hospital for more than four years, without a single complication. Occasionally there is not complete relief from pain, but in all cases relief is sufficient to warrant the use of the method. There has been complete relief in over 50 percent of the cases.

Technic

The patient is placed in the left decubitus. The sacrococcygeal region, from the last lumbar vertebra to the tip of the coccyx, is surgically prepared, shaved and scrubbed. Tincture of iodine and alcohol are applied. Sterile towels protect the field. A solution of one percent of sterilized Novocain (procaine) is used. I have used two percent in many cases, but I find that one percent is just as effective.

The sacrococcygeal hiatus is easily located by pressure with the index finger. With a 2-cc., glass syringe, on which is affixed a 25- or 27-gage, short, sharp needle, the skin in the region of the hiatus is in-

*Med. Rec., Dec. 4, 1935.

filtrated, using about 1.0 cc. of the solution through a single puncture. The needle is then guided into the hiatus and about 0.5 cc. of the Novocain solution is injected.

This needle is withdrawn. A 21-gage needle, 12 cm. in length, is then introduced through the same puncture, first in a right-angle direction to the sacrum, and as soon as the dense fascia is penetrated the direction of the needle is changed to a meridian, about fifteen degrees off a parallel position. The needle should enter the canal without difficulty. It is then pushed cephalward and slightly ventrally for a distance of about 10 cm. As soon as the operator feels that the needle is deep enough, he should connect a 20-cc., glass lock-syringe, filled with the Novocain solution; before injecting the solution the piston should be slightly withdrawn, to determine if blood or serum is drawn into the syringe. If blood shows, either push the needle higher or withdraw it 0.5 cm. and try again. If fluid comes, this may be spinal fluid. This has never happened in our experience, but it is a possibility in anomalies. In this event the needle should be withdrawn 1.0 cm. and the test repeated. The anesthetic fluid should not be injected as long as blood or serum is sucked into the syringe by withdrawal of the piston. The injection of the fluid is then started, *extremely slowly*, consuming about one-half minute to each cc. of fluid.

For the ordinary case, where the progress is satisfactory, I use only 20 cc.; but in cases which are slow and difficult, I inject 30 cc. I have injected 20 cc. at a second injection, three hours after the first, without any complications. On withdrawal of the needle the wound is sealed with collodion, and the patient is placed in the dorsal decubitus to proceed with her labor. Needles and syringes used in this work should be sterilized by steam or boiling, never by chemicals.

N. ODEON BOURQUE, M.D.

Chicago, Ill.

Benzedrine in Nasal Congestion

BENZYL methyl carbinamine carbonate (Benzedrine), as used in a convenient inhaler tube as an aid in the relief of nasal congestion from various causes, appears to have a real value; it offers to the physician treating such condition: a safe, effective medium for controlling the discomforts of his patients between office treatments.

Contraindications to the use of this drug are negligible, since untoward reactions are few and, when recognized, are simply controlled by discontinuance.

It has a broad field of application in the many rhinological conditions. It meets the

demand of the patient for palliation of symptoms when at home or pursuing his occupation. The physician, after but brief experience with it, can and should instruct the patient concerning the burning sensations of the nose and possible brief coughing spells which may occasionally be caused, and the tendency to wakefulness if it is used too frequently before retiring.

Like all drugs, it should always be prescribed by the physician and used only under his direction.

It should not be considered a panacea nor its use substituted for regularly indicated treatment. It fills a definite need for a readily portable, effective, safe addition to our present armamentarium of useful drugs.—J. ALLEN BERTOLET, M.D., Philadelphia, in *M. J. & Rec.*

Look for **THE LEISURE HOUR** among the advertising pages at the back.

Diffusion of Colloids

DEAR "C. M. & S.":

As I understand it, a colloid cannot diffuse through a membrane; and if that is so, I cannot see how colloidal gold given by mouth, as recommended in the treatment of inoperable carcinoma and other conditions, can be effective. Can you straighten me out on this point?

A. GINSBURG, M.D.

Philadelphia, Pa.

(Note:—This letter was referred to Dr. Hermann Hille, of Chicago, who is an authority on colloids, and the following reply was received.—Ed.)

This question is a very logical one, but a definite, scientific answer is difficult, considering our limited understanding of the *modus operandi* involved. The following suggestions, however, will enable you to form your own conclusions:

1.—The statement "a colloid cannot diffuse through a membrane" is not strictly correct. Much depends, not only on the relative size of the pores in the membrane and of the colloidal particles in the solution, but also on the respective electric charges. Some colloids have a negative electric charge, others a positive charge. The same is true in the case of membranes.

2.—Another consideration enters here. Living membranes undoubtedly act differently from dead membranes. This is clearly indicated by certain processes in the living animal or human organism, such as the migration of leukocytes through the walls of blood capillaries. The size of leukocytes

is immense, as compared with colloid particles. Their relative and real size is shown in the reprint of "Colloids: Just what are they?" which I shall be glad to send to any who request it, addressing me at 1791 Howard St., Chicago. Relatively speaking, their difference in size is about the same as the difference between an elephant and a very small mouse.

3.—Colloids possess powerful catalytic action. Bredig found that, in the case of colloidal platinum, the catalytic action was so great that one part of it decomposes 70 million parts of hydrogen peroxide.

4.—Colloids are said to form harmless depots, from which ions are set free as needed.

HERMANN HILLE, Ph.D.

Chicago, Ill.

[This is another instance of the fact that our knowledge of chemistry, as well as of all the other sciences, is now in a state of flux. Many dogmatic statements, made and universally accepted a generation or even a decade ago, are now, not merely questioned, but have actually been proved to be erroneous. Well-informed scientists make few dogmatic statements today, and it behooves all physicians to keep themselves posted on the new developments.—Ed.]

Electrosurgical Treatment of Pyorrhea*

LEARNING of the physiologic effects derived through the use of the coagulatory effects of the high-frequency current in the treatment of hypertrophied turbinates, infected tonsils, etc., I began a clinical study of the physiologic effects of the agency with regard to its effect on the gums and associated tissues. Exhaustive clinical and pathologic check-ups followed.

While early efforts resulted in the unnecessary destruction of some tissues, with consequent suffering on the part of the patient, it was evident from the beginning that the idea offered tremendous possibilities. The fundamental idea was the control of pyorrhea with the coagulatory effects of the high-frequency current. It was evident that unusually high frequency was needed, with refined control, to enable the operator to manage accurately the coagulatory current in very small fields or areas. Obviously, it also was necessary that the operator be thoroughly familiar with the contraindications and be able to estimate the allergy of the patient to determine the maximum area which could be treated at one operation.

The next problem was the designing of a



Fig. 1.

smooth and practical electrode which could be universally applicable to the buccal, lingual and interproximal areas of the gums.

Briefly, our findings thus far may be summarized as follows:

- 1.—The prognosis is decidedly and unusually favorable in all cases where 30 percent or more attachment remains.
- 2.—The contraindications are few, but decidedly important.
- 3.—The preliminary instrumentation, scaling, and polishing are neither necessary nor even advisable before operation.
- 4.—Neither local nor general anesthesia is necessary.
- 5.—The operative work in each area is completed in one operation.
- 6.—Areas of from one to five teeth may be treated at one operation.
- 7.—The after-pain and discomfort to the patient are negligible.
- 8.—Clinical histories as old as three years show that there has been no recurrence, except in a very few of the earliest cases treated (before the technic was standardized).

The technic is rational, the practitioner's time is conserved, the fees are fair to dentist and to patient.

No doubt the systemic condition of the patient plays an important part in the management of pyorrhea, and it is often necessary to have the patient examined by a physician before attempting treatment. Another condition also exists wherein the absorption of bacteria and their toxins from the pockets cause serious systemic conditions.

Of course a full-mouth x-ray examination invariably precedes the actual operative work. My own practice is invariably to use the double film packs. One set is developed for a period of 3½ minutes, with the solution at a temperature of 65° F. The other set is developed for 5 minutes at the same tempera-

*Dental Survey, Aug., 1935.



Fig. 2.

ture. A comparison of the two sets of films indicates the amount of soft tissue that must be destroyed.

Before starting the operative work, I instruct the patient in the Charters' method of brushing the teeth. Much emphasis should be placed on this part of the technic, as it is the most important part which the patient plays in cooperating to obtain the maximum benefit from this procedure.

The area then selected to be operated upon will include from one to five teeth. This area is packed with an astringent on cotton all around the buccal and lingual gum margin. I have found it unnecessary to use block or any other method of anesthesia for this work; however, it may be used with highly nervous patients if the operator so chooses. While there is some slight discomfort during the operation, most patients prefer it to the grinding on a tooth, and do not complain.

Operative contact with the patient is made by means of an electrode made up in accordance with my own specifications. The actual electrode contacts are two silver-pointed prongs which protrude from the handpiece of the electrode. The design of the electrode used for this purpose is very important. The objective is controlled coagulation in a very small area, which requires a current of very high frequency, and unusual refinement (micrometer) of control. The two-pronged electrode allows accurate management of coagulation, since coagulation takes place only between the two poles, or prongs, and in immediately adjacent areas. The danger of the mono-polar or single-point

electrode is in the ease with which a tooth may unintentionally be devitalized.

The electrode points are put in contact with that portion of the gingival margin to be coagulated (Fig 1). Then the foot switch is pressed just long enough to bring about coagulation of the diseased tissue. The process is repeated until the tissue of each tooth being treated has been completely encircled at all pathologic points.

In order to eradicate the interproximal tissue, the points are adjusted so that they can be placed in position on each side of the gum papilla (Fig. 2), and the process of coagulation is repeated on both lingual and buccal surfaces until one is sure that all the diseased area has been reached. If the patient gives a history of sensitive teeth, the electrode is also used with both points in contact with the tooth proper (Fig. 3).

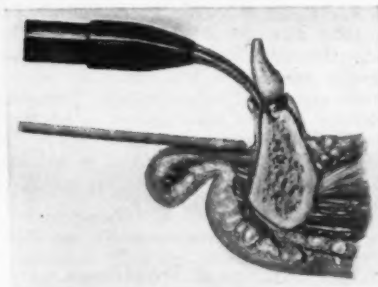


Fig. 3.

Following this treatment, as soon as healing is started, a very thorough cleaning and polishing of the teeth should be given. The importance of this step cannot be over-emphasized. The occlusion should be balanced and any faulty dentistry corrected at once, thereby reducing the excess strain placed on the individual teeth to compensate for the former loss of supporting structure.

I am of the opinion that it is advisable to treat only a few teeth at a time, with an interval of one week or more between treatments. In this manner the patient is not conscious of any great discomfort. The usual tendency of the operator at first is to over-treat the area.

G. FARRELL WEBB, D.D.S.

Kansas City, Mo.

Effects of Progynon B

THE benzoated female sex hormone (Progynon B), when administered in sufficiently large doses, will produce menstrual bleeding after amenorrhea of nine years' duration, and, when combined with the anterior pituitary lobe extract, is effective in in-

ducing menstruation in certain amenorrheas of one year's duration, even when associated with progressive and extreme atrophic states of the ovaries and uterus, such as are found in Simmonds' disease.

The benzoated female sex hormone induced hypertrophic changes in hypoplastic uteri and breasts; is nontoxic in extremely high single and accumulative doses; controls the melancholia associated with hypovarian states; and is also effective in migraine, irrespective of sex.—DR. CHARLES W. DUNN, in *A. J. Obst. & Gynecol.*, Aug., 1935.

A Folding Wheel Chair

PATIENTS who require a chair for locomotion, but who, aside from this, are able to get about more, need no longer be confined to the house because of the cumbersome nature of their vehicle.

The folding wheel chair shown in Fig. 1, when open for use, is commodious but narrow enough to go through many doors that an ordinary wheel chair will not pass. It weighs only 28 pounds and, when folded, as shown, is only 9 inches wide, so that it can conveniently be placed in an automobile or on a train, when the patient is traveling.

The chair is strongly constructed and good looking and is suitable for use in the house, if the reclining feature is not required.

Injection Treatment of Hydrocele

THE technic employed in the injection treatment of hydrocele consists, first, of the selection of a site for the puncture of the tumor which will not endanger the testicle or the epididymis. The skin over this point should then be anesthetized by injecting, subcutaneously, a few drops of a 1-percent procaine solution.

An 18- or 20-gage needle is then introduced through the anesthetized area and into the sac of the hydrocele, by tunneling under the



Courtesy, Everest and Jennings.

Fig. 1.—(Left) Chair open for use; (Right) Chair folded.

skin, and the contents of the sac thoroughly aspirated; after which the contents of the scrotum should be carefully palpated (without disturbing the needle), to make sure that there is no solid tumor nor evidence of tuberculous, which would require different treatment.

After making sure that the needle used for aspirating has not slipped out of the sac, the obliterative solution should be injected through it, the amount injected depending upon the size of the hydrocele—from 0.5 to 6 cc., as required. For children, the doses are about one-half, as the sac is generally smaller.

The most satisfactory fluid now available for such injections is a combination of sodium morrhuate and quinine, known as Moru-quin and described in an article in *CLIN. MED. & SURG.* for October, 1935, on page 481.

Fluid will usually reaccumulate in the sac following the first injection, and in that case the treatment should be repeated after a week or ten days, using the same quantity of solution as before. If fluid again comes into the sac, and is not reabsorbed after three weeks, a third injection may be given, usually with a smaller amount of obliterative solution. Even four injections may be required, though one suffices in most cases.

Should epididymo-orchitis occur, as it may in some cases, but rarely when Moru-quin is used, the time interval between injections should be lengthened, to allow the inflammatory process to subside.

F. R. GREENBAUM, M.D.
Philadelphia, Pa.

DIAGNOSTIC POINTERS

Cor Pulmonale

IF, after an operation on the abdomen or chest; a fracture or severe sprain; or phlebitis, sudden substernal distress and dyspnea develop, with weak and irregular heart action; an accentuated second sound; a to-and-fro precordial friction rub; and swelling and pulsation of the jugular veins, *think of extensive pulmonary infarction*, with a load on the right heart causing cardiac and right pulmonary artery dilatation and acute heart failure. Differential diagnosis must be made from dissecting aneurism of the aorta; coronary thrombosis; and pulmonary edema.—**DR. PAUL D. WHITE**, Boston, Mass.

Mucous Colitis

THE beginning of "colitis" is a psychogenic mucorrhœa, determined by overdependence on parental love and shelter and often aggravated by the death of a father.

Many patients dislike their occupations and are relieved to escape from them (subconsciously) by means of "colitis."—**DR. FRANK BOBMAN**, in *A. J. Med. Sci.*, Oct., 1935.

Rheumatic Adhesive Pericarditis

IN rheumatic adhesive pericarditis, shoulder pain is present when the diaphragm is involved in the process. The outer leaf of the diaphragm is referred to the inner aspect of the shoulder and vice versa.—**DR. M. LEONARD GOTTLIEB**, in *Med. Rec.*, Dec. 4, 1935.

Aschheim-Zondek Test for Pregnancy

ONE thousand (1,000) Aschheim-Zondek tests for pregnancy were carried out under the supervision of the writer, who personally made all examinations of the ovaries.

In Zondek's published statistics of 5,515 cases, the error in diagnosis was from 1 to 2 percent. In the writer's series the error amounted to 1.2 percent. In 2 cases in which the A-Z test was positive, the patients were clinically found not pregnant; in 10 cases in which the A-Z test was negative, the patients were clinically found pregnant.—**DR. R. KURZROK**, of New York City, in *New York St. J. M.*, June 15, 1932.

Menstrual Irregularities and the Ductless Glands

CONSERVATIVELY, 70 percent of women with endocrine dyscrasia have menstrual irregularities. The anterior hypophysis, ovaries, thyroid, adrenals and placenta have marked influence over sex functions and menstruation.—**DR. C. A. WRIGHT**, of Los Angeles, in *M. J. & Record*, Jan. 4 and 18, 1933.

Effects of the Pineal Gland

OVERACTIVITY of the pineal gland in the parents retards the *growth and hastens the biologic development* (adolescence) in rats, producing *precocious dwarfs* in the progeny.—**DR. LEONARD G. ROWNTREE**, Philadelphia.

Cancer of the Liver

SECONDARY carcinoma of the liver nearly always causes very considerable and sometimes enormous enlargement and great hardness of that organ, not infrequently accompanied by jaundice or ascites, or both.—*Radiol. Rev.*, April, 1935.

Pulmonary Edema in Nerve Diseases

IN certain diseases of the nervous system, pulmonary edema may occur, with no organic changes present in the lungs. In fact, it may be produced by irritation of the vagus nerve with pilocarpine.—**DR. L. HESS**, of Vienna, in *Wien. Med. Wchnschr.*, No. 11, 1934.

Non-Tropical Sprue

SPRUE can no longer be considered as a strictly tropical disease, as it has been found in a number of places in the temperate zone, under such names as "non-tropical sprue," "idiopathic steatorrhea," "adult celiac disease," etc.

The blood picture in sprue resembles that of primary anemia. The stools are pale, voluminous, foul and obviously fatty. Blood calcium and phosphorus are low.—**DRS. SNELL, CAMP and WATKINS**, in "Proceedings of the Staff of the Mayo Clinic," Mar. 20, 1935.

NEW BOOKS

Any book reviewed in these columns will be procured for our readers if the order, addressed to **CLINICAL MEDICINE AND SURGERY**, Medical & Dental Arts Bldg., Waukegan, Ill., is accompanied by a check for the published price of the book.

The love of books is a love which requires neither justification, apology nor defense.—LANGFORD.

Marriott: Infant Nutrition

INFANT NUTRITION. A Textbook of Infant Feeding for Students and Practitioners of Medicine. By **Williams McKim Marriott, B.S., M.D., Professor of Pediatrics, Washington University School of Medicine; Physician in Chief, St. Louis Children's Hospital, St. Louis.** Second Edition. St. Louis: The C. V. Mosby Company. 1935. Price, \$4.50.

It is five years since the first edition of Dr. Marriott's book on infant nutrition appeared, his purpose being to summarize the then-known knowledge concerning the nutritional requirements of infants under normal and pathologic conditions and to indicate the effects of failure to meet these requirements. Advances in our knowledge of food and its metabolism since 1930 have necessitated a complete revision of the book. The chapter on vitamins has been completely rewritten; a new chapter on allergy has been added; and other very extensive alterations and omissions have been made.

Pediatricians should find this up-to-date textbook a decided help in their practice. The excellent typography calls for mention.

Beck: Obstetrics

OBSTETRIC PRACTICE. By **Alfred C. Beck, M.D., Professor of Obstetrics and Gynecology, Long Island College of Medicine; Obstetrician and Gynecologist-in-Chief, Long Island College Hospital, Brooklyn.** More than One Thousand Illustrations. Baltimore: Williams & Wilkins Company. 1935. Price, \$7.00.

The author of this volume determined long ago to make this the ideal textbook, and out of his long years of experience as a teacher and obstetrician and his knowledge of the needs of both students and practitioners, he has labored for years and brought forth a really splendid book, decidedly and refreshingly different from the conventional types of textbooks.

Its form of presentation is logical and pedagogically sound. The language of the text is concise and terse, yet complete and unmistakable. The 1100 (mainly original) drawings illuminate the subject beyond all possibilities of misunderstanding and make the volume a veritable atlas as well as a textbook. There are no superfluous sections

and all divisions of the subject are adequately dealt with without skimping or padding.

Especial attention has been given to the details of prenatal care and to the mechanism of labor. Specific and unmistakable instructions are given for the care of the toxic patient. A large part of the text deals with the important subject of the effect of pregnancy on the more common medical and surgical diseases. Details of obstetric operations are illustrated to show each procedure step by step. It is impossible here to outline the book by listing the contents of its 39 chapters.

The paper is of good quality, the type large, well-spaced and clear, the binding strong and handsome and the index ample. The price, considering the size and character of the book, is decidedly moderate.

Here is a work which will promptly be recognized as being indispensable to medical students and to all physicians who do any obstetric work whatever.

Bubis: Puerperal Gynecology

PUERPERAL GYNECOLOGY. By **J. L. Bubis, M.D., F.A.C.S., Consultant in Obstetrics, Gynecologist, Mt. Sinai Hospital, Cleveland, Ohio; Member of the Central Association of Obstetricians and Gynecologists.** Baltimore: William Wood & Company, 1935. Price, \$3.50.

The chief difference between a midwife and a modern obstetrician is that the latter is also a gynecologist, and is, therefore, equipped to deal with the traumas produced by labor, even if he does not always do so.

For years, Dr. Bubis has been insisting that injuries to the birth canal should be repaired immediately after delivery, and that "No laceration is small enough to be neglected." Failing such immediate repair, he urges that such injuries should be taken care of as soon as they are discovered.

In this brief but exceedingly practical and helpful monograph, the author shows, in detail, how the obstetrician, in his rôle as a gynecologist, can and should carry his patient through the prenatal period, the delivery and the puerperium, so as to minimize trauma and correct such injuries as are unavoidable.

The diagrams illustrating all of the operative procedures recommended are so clear and detailed and the instructions so direct

and simple, that any well-trained general practitioner who does any surgery at all, should be able to carry them out. In fact, this is, to all intents and purposes, a manual of the art of simple, modern obstetrics, as distinguished from mere midwife practice, on the one hand, and from the management of rare and complex obstetric complications, on the other.

No general practitioner who does any obstetric work at all (and that means most of them) can afford to deny himself the practical help in his daily work which this book will give him, especially when its price is so modest. The enhancement of his reputation as an accoucheur which will come from a study of these pages and the practice of their precepts will return the price, a hundred times over, every year.

King: Rarefying Conditions of Bone

LOCALIZED RAREFYING CONDITIONS OF BONE. As Exemplified by Legg-Perthes' Disease, Osgood-Schlatter's Disease, Kummell's Disease and Related Conditions. By E. S. J. King, M.D., D.Sc., M.S.(Melb.), F.R.C.S., (Eng.), F.R.A.C.S., Honorary Surgeon to Out-Patients, Melbourne Hospital, Stewart Lecturer in Pathology, University of Melbourne. Baltimore: William Wood & Company. 1935 \$7.50.

This monograph includes a scholarly review of the literature on the pathology, diagnosis and treatment of localized rarefying changes in bone, as exemplified by Legg-Perthes' disease, Osgood-Schlatter's disease, Kummell's disease and related conditions. The material personally investigated comprises 160 cases chosen from a large number encountered in hospital and private practice.

Naturally this important work will be appreciated not only by pathologists, but by physicians and surgeons generally, and especially orthopedic surgeons.

Thoms: Obstetric Pelvis

THE OBSTETRIC PELVIS. By Herbert Thoms, M.D., F.A.C.S., Associate Professor of Obstetrics and Gynecology, The School of Medicine, Yale University. With Drawings and Photographs by the Author. Baltimore: The Williams & Wilkins Company. 1935. Price, \$2.50.

The importance of antenatal knowledge of the true dimensions of the pelvis is now fully recognized. The author strongly believes that roentgen-ray pelvimetry should form part of the prenatal examination of every primiparous woman. Every progressive physician who handles obstetric cases will appreciate the up-to-date and valuable information conveyed by this very practical little book. The fifty excellent drawings and photographs by the author are very helpful.

This volume provides practitioners of obstetrics with a working knowledge of those variations and abnormalities of the bony

pelvis which may affect obstetric procedure. In addition, extensively proved modern methods of diagnosis are described, for the first time in book form, with the aid of which the conduct of labor has become a much safer procedure.

Midwifery By Ten Teachers

MIDWIFERY BY TEN TEACHERS. Under the Direction of Clifford White. Edited by Sir Comyns Berkeley, J. S. Fairbairn and Clifford White. 5th Edition Fully Revised. Baltimore: William Wood & Company. 1935. Price, \$6.00.

This book has frankly been written for students preparing for examination. The writers are all teachers in London medical schools. This fifth edition has been thoroughly revised and such new material as seemed necessary has been added. There are five sections, covering pregnancy, labor and abnormal labor, the puerperium, the newborn child and the relief of pain and suffering in obstetric practice.

The book appears to be very suitable for fulfilling its object as a quiz compend.

Steindler: Locomotion in Man

MECHANICS OF NORMAL AND PATHOLOGICAL LOCOMOTION IN MAN. By Arthur Steindler, M.D., F.A.C.S., Professor of Orthopedic Surgery, State University of Iowa, Iowa City, Iowa. Springfield: Charles C. Thomas. 1935. Price, \$8.00.

This is a textbook for students of orthopedic surgery and is a revised presentation of lectures which the author delivered on this phase of the subject over a number of years. It is intended to demonstrate the relation between theoretical analyses of the mechanics of human locomotion and the practical aspects, especially from the physiologic and pathologic viewpoints. The orthopedic interest lies in the comparison of the strength and stress of bone and the elasticity of muscles with experimental observations made on inanimate materials.

A proper understanding of the author's exposition implies a certain acquaintance with the laws of physics and mathematics. But such as are necessarily introduced throughout the text, in explaining biophysics, are reduced to simple terms within the easy comprehension of those having only a limited knowledge of the sciences referred to.

The book is divided into two parts: the first deals with the general mechanics of locomotion; the second part covers the special mechanics controlling the motions of the spine, pelvis, limbs and joints. Three chapters deal with gait, both physiologic and pathologic.

This work is rather a new departure, dealing very comprehensively with a section of orthopedics which has received only summary treatment in general textbooks. It should be welcomed by all those who have

to teach this branch of physiology and by surgeons, both general and special, because the preservation of function is now, as it always should be, regarded as a necessary part of the art of surgery.

Morton: Human Foot

THE HUMAN FOOT. Its Evolution, Physiology and Functional Disorders. By **Dudley J. Morton**, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University. Morningside Heights, New York: Columbia University Press. 1935. Price, \$3.00.

By reason of his studies on the evolutionary development and physiology of the human foot, Dr. Morton has carried the knowledge of its common functional disorders from the often misleading interpretations of surface observations, to a demonstrable and intimate knowledge of the disorders as they affect the internal parts.

The work is distinctly revolutionary. It directly opposes the two outstanding concepts of foot trouble: namely, its origin being primarily due to weakness of the muscles and to the existence of an anterior transverse metatarsal arch. And whereas x-ray examinations are rarely used in these cases except to identify the possible presence of some complicating factor, he has shown that it is the most necessary and reliable means of diagnosis and intelligent treatment.

The first part of the book contains a full review of his studies on the evolution of the foot and man's posture. These have received wide acceptance both here and abroad, and are taught in anthropologic courses at various universities. The second part deals with the normal physiology of the foot, analyzing its function and evaluating the importance of its different parts. These sections are complete in themselves and written for those whose interest is academic, quite as much as for those who are interested in disordered function.

The importance of the work, especially in its clinical aspects, lies in the soundness and extent to which Dr. Morton has developed this new approach to foot study and in the fact that the data are not available elsewhere.

Eusterman and Balfour: Stomach and Duodenum

THE STOMACH AND DUODENUM. By **George B. Eusterman, M.D., F.A.C.P.**, Head of Section in Division of Medicine, The Mayo Clinic; and **Donald C. Balfour, M.B., M.D. (Tor.), LL.D., F.A.C.S., F.R.A.C.S.**, Head of Section in Division of Surgery, The Mayo Clinic; and Members of the Staff, the Mayo Clinic and the Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. Illustrated. Philadelphia and London: W. B. Saunders Company. 1935. Price, \$10.00.

Like most of the monographs published by various members of the Mayo Clinic, the pres-

ent volume represents a carefully elaborated study dealing with the nature, diagnosis and medical and surgical diseases of the stomach and duodenum. As compared with standard textbooks, the volume differs in that it is based purely on the clinical observations and studies by the various contributors. Thus one will look in vain for detailed description of gastrostomy of any of the known types, an operation that is treated in every surgical textbook or encyclopedia. This is easily explained by the fact that the authors have not written for undergraduates or occasional operators, but for specialistically trained and experienced surgeons. The problem of when to operate and when to rely on non-operative therapy is well brought out by clinically illustrative cases, while those interested in histopathology and pathophysiology will find a wealth of interesting material. The volume marks a milestone in the scientific advance of our knowledge of gastroduodenal diseases and their scientific present-day care.

G. M. B.

Beer: Bladder Tumors

TUMORS OF THE URINARY BLADDER. By **Edwin Beer, M.D., F.A.C.S.**, Visiting Surgeon, Mount Sinai Hospital; Consulting Surgeon, Bellevue Hospital, New York City. With 52 Illustrations Including 8 in Color. Baltimore: William Wood & Company. 1935. Price, \$3.50.

Out of an experience covering twenty-three years and more than 600 cases of bladder tumors, Dr. Beer has set forth the results in this brief and practical monograph, which will be especially helpful to pathologists and urologists, but will also give the general clinician an idea of how to diagnose these neoplasms and what may be done for them in the way of treatment; the chief purpose of such information being to enable him to refer such cases to a urologist at an earlier stage.

This does not pretend to be a textbook, but merely a report of one man's experience in one limited field within an important specialty, and as such it serves its purpose well. The photomicrographs of sections of benign and malignant tumors and the color plates of cystoscopic appearances are especially good. The bibliography is very extensive, occupying 27 pages. Under the heading of treatment, transurethral operations, total cystectomy and radiation treatment are included. The book work is excellent.

Bridges: Food and Beverage Analyses

FOOD AND BEVERAGE ANALYSES. By **Milton Arland Bridges, B.S., M.D., F.A.C.P.** Philadelphia: Lea & Febiger. 1935. Price, \$3.50.

The constantly increasing use by the public of canned and packaged foodstuffs makes it very necessary that some independent, reliable guide to their dietetic values should be available, other than that supplied by the manufacturers. This book supplies this

need, covering, as it does, the carbohydrate, protein, fat and caloric values of almost every commonly available food. Over 3,200 analyses of nutritive values are presented; over 400 iodine analyses; 350 analyses of vitamins; and analyses of over 500 foods for their contents of calcium, phosphorus, iron, copper and other salts.

This handy volume should be on the desk of every physician who furnishes his patients with diet lists. It should find a place in every hospital library and every dietetic kitchen, as a textbook, not only for actual responsible dietitians, but for students and consultants. The intelligent layman, who is now made conscious of the importance of diet in the maintenance of good health, will find here authoritative information on alcoholic, nutritive, mineral and vitamin values.

The bookwork is excellent and there is an extensive bibliography.

Havens: Typhoid and Dysentery and Their Carriers

THE BACTERIOLOGY OF TYPHOID, SALMONELLA AND DYSENTERY INFECTIONS, AND CARRIER STATES. By Leon C. Havens, M.D., Director of Laboratories, Alabama Department of Public Health. New York: The Commonwealth Fund; Oxford University Press, London: Humphrey Milford. 1935. Price, \$1.75.

This manual presents a comprehensive discussion of the bacteriology of the typhoid-salmonella-dysentery group of organisms, with complete and exact detail as to methods of recovery and identification.

This book is a practical guide for all bacteriologists and technicians, whether in public or private diagnosis laboratories, who are concerned with the identification of the causative organisms in the typhoid-salmonella-dysentery infections. Epidemiologists will be especially interested in the discussion of the carrier problem, including typhoid fever carriers, and in Dr. Havens' appreciation of the inter-relationship between the laboratory and field investigation.

Goodwin: Biography of Hibbs

RUSSELL A. HIBBS. Pioneer in Orthopedic Surgery, 1869-1932. By George M. Goodwin. New York: Columbia University Press. 1935. Price, \$2.00.

The story of Hibbs' life is intended as a source of inspiration to the young man entering the medical profession and as encouragement for all doctors who have high ideals in their calling. Briefly, it is that of a poor country boy who arrived in New York without friends or resources, rose to prominence in his profession, and came to occupy the chair of professor of orthopedic surgery at Columbia University.

An idealist, he placed proficiency in his profession above all other considerations. Practically, for example, he established the

policy of paying staff physicians in private hospitals for their work in caring for the sick poor. Previously there had been no reward, and the need of money was a factor in forcing the staff physician to attend first those sick who could pay him and then, having time and money, the poor.

Another illustration of his achieving greater public benefit and professional prestige is his obtaining endowments for the support of talented young men who intended to become specialists. It was an important democratic solution to the problem of "specialists" inadequately trained because of lack of financial backing.

Stephenson: Incompatibility

INCOMPATIBILITY IN PRESCRIPTIONS AND HOW TO AVOID IT. With a Dictionary of Incompatibilities. By Thomas Stephenson, D.Sc., Ph.C., F.R.S.E., F.C.S., Editor of *The Prescriber*, *Some Time Examiner to The Pharmaceutical Society of Great Britain*. Fourth Edition, Revised and Enlarged. Edinburgh: Prescriber Offices. 1935. Price, \$1.50.

Medical students today have little training in pharmaceutical chemistry and prescription writing, and the ready-made formula is the line of least resistance.

In this little book of 60 pages, the principles of incompatibility in prescriptions are set forth systematically, so that they can be learned and applied extemporaneously to specific conditions. An alphabetic list of drugs, with their doses, solubilities and incompatibles, is furnished for use when there is time and opportunity to do so.

Although this work is based upon the British Pharmacopoeia, most of it will be of value to American medical students and to physicians who are a bit weak on prescription writing.

Williams: Anatomy and Physiology

A TEXTBOOK OF ANATOMY AND PHYSIOLOGY. By Jesse Feiring Williams, M.D., Professor of Physical Education, Teachers College, Columbia University, New York City. Fifth Edition, Revised, with 416 Illustrations, 31 of them in Colors; 606 pages. Philadelphia: W. B. Saunders Company. 1935. Price, \$2.75.

For the teacher, student and worker interested in any one or more of the allied arts of nursing, physical therapy, physical education or occupational therapy, the name of Jesse Feiring Williams is an inspiration. Only such an exceptionally qualified authority could so combine the two fundamentally important subjects of anatomy and physiology as to render the usually difficult and wearisome task of teaching and of studying them interesting as well as instructive.

This is not an abbreviated compendium of dissociated essentials nor, on the other hand, is it bewilderingly inclusive. It is a complete, precisely balanced and easily comprehended arrangement of all the important points and fundamental conceptions essential

to a practical and applicable understanding of the two subjects so intimately associated with the daily task of building and retaining healthy bodies.

The clear printing and illustrations and the general arrangement of the subject matter make it one of the most satisfactory books of its kind for both scholastic and professional study.

J. E. G. W.

Look for **FACTS AND COMMENTS** among the advertising pages at the back.

Crossen and Crossen: Diseases of Women

DISEASES OF WOMEN. By Harry Sturgeon Crossen, M.D., F.A.C.S., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital and St. Luke's Hospital, etc.; and Robert James Crossen, M.D., Instructor in Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital. Eighth Edition, Entirely Revised and Reset. With One Thousand Fifty-Eight Engravings, Including One Color Plate. St. Louis: The C. V. Mosby Company. 1935. Price, \$10.00.

The first edition of Crossen's well-known

textbook of gynecology appeared in 1907 and this is the eighth edition, rewritten and revised to include the newer knowledge and aspects of the subject. The original intention was to present all the important points clearly and systematically, with particular reference to their clinical application and omitting the details of major operative technic. This policy has been continued in the later editions and the present manual presents concisely the gynecologic knowledge of today, arranged systematically for teaching purposes. The book is, therefore, preeminently one for clinical teachers and medical students rather than for the gynecologic surgeon, and by such its appearance should be warmly welcomed.

There are 22 chapters; of these the chapters on gynecologic pathology and gynecologic examination methods are particularly commendable.

Special attention has been given to the development of knowledge concerning the endocrine system, in so far as it affects the genital tract. This new knowledge affects nearly every department of gynecology, either in its physiologic and pathologic or its therapeutic aspects.

As in previous editions, the greatest use is made of illustrations and the present book contains more than one thousand.

The general book-work and typography are excellent.

New Books Received

The following books have been received in this office and will be reviewed in our pages as rapidly as possible.

HANDBOOK OF PRACTICAL HYGIENE. By D. H. Bergey, A.M., M.D., New York: The Chemical Publishing Company. Price, \$1.50.

THE TREATMENT OF FRACTURES. By Dr. Lorenz Bohler. 4th English Edition. Translated from the 4th Enlarged and Revised German Edition by Ernest W. Hey Groves, M.S., M.D., F.R.C.S. Baltimore: William Wood and Company. 1935. Price, \$12.00.

AGENTS OF DISEASE AND HOST RESISTANCE. Including the Principles of Immunology, Bacteriology, Mycology, Protozoology, Parasitology and Virus Diseases. By Frederick P. Gay and Associates. Springfield: Charles C. Thomas. 1935. Price, \$10.00.

FOR AND AGAINST DOCTORS. An Anthology Compiled by Robert Hutchinson and G. M. Wauchope. Baltimore: William Wood & Company. 1935. Price, \$2.00.

FASCIÆ OF THE HUMAN BODY AND THEIR RELATIONS TO THE ORGANS THEY ENVELOP. By Edward Singer, M.D. Baltimore: The Williams & Wilkins Company. 1935. Price, \$3.00.

BLOOD GROUPS AND BLOOD TRANSFUSION. By Alexander S. Wiener, A.B., M.D. Springfield: Charles C. Thomas. 1935. Price, \$4.00.

KNY-SCHEERER CATALOGUE OF SURGICAL INSTRUMENTS. 24th Edition. Long Island City, New York: Kny-Scheerer Corporation. 1935. Available only through surgical instrument dealers to whom applications for copies should be made.

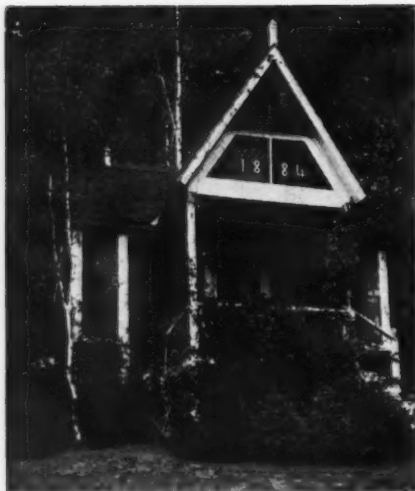
ROENTGENOLOGY. The Borderlands of the Normal and Early Pathological in the Skiagram. By Alban Kohler, Prof. Dr. Med., Wiesbaden. 2nd English Edition Revised by the Author. Translated and Edited by Arthur Turnbull, M.S., B.Sc., M.B., Ch.B. (Glasg.). Baltimore: William Wood and Company. 1935. Price, \$14.00.

THE HUMAN BODY ITS STRUCTURE AND ACTIVITIES AND THE CONDITIONS OF ITS HEALTHY WORKING. By H. Newell Martin, D.Sc., M.D., F.R.S. 11th Edition, Thoroughly Revised by Ernest G. Martin, Ph.D. New York: The Chemical Publishing Company. Price, \$4.00.

THE NATIONAL FORMULARY. 6th Edition. National Formulary VI. N.F. VI. Washington: American Pharmaceutical Association. 1935. Price cloth, \$5.00, flexible leather, \$6.00.

THE EXCHANGE OF ENERGY BETWEEN MAN AND THE ENVIRONMENT. By L. H. Newburgh, M.D. and Margaret Woodwell Johnston, Ph.D. Springfield: Charles C. Thomas, 1930. Price, \$2.00.

MEDICAL NEWS



Courtesy, Keystone View Co.

Little Red Cottage

THE first building where the open-air treatment of tuberculosis was carried out was the "Little Red Cottage," erected near Saranac, N. Y., in 1884, by Dr. Edward Livingstone Trudeau. This historic building is shown in the picture above.

The Advertisements are NEWS! Read and use them.

Pioneer Roentgenologist Passes

DR. FRANCIS LEROY SATTERLEE, JR., of Montauk, L. I., N. Y., who took the first x-ray photograph made in the United States on his fifteenth birthday (Feb. 4, 1896), less than three months after Roentgen had discovered the rays in Germany, and who was a pioneer in the development of roentgenology in this country, succumbed, on December 3, 1935, to the late results of the burns received during his early work with these potent rays.

Unable to practice for several years before his death, Dr. Satterlee became interested in radio, and several of his inventions are now in use.

Openings for Physicians in Nebraska

INFORMATION has been received in this office of three places in Nebraska where there are openings for capable and energetic physicians.

From one town, in the midst of a good wheat, corn and cattle raising territory, a registered nurse writes that they have no physician at all. Those who are interested may write to Mr. Bud Logan, Druggist, or Miss Bess Gibboney, R. N., (Box 115), Haigler, Neb.

Another location is at Clarkson, Colfax County, Neb., which is said to be a good community. A doctor who was there has recently removed, for personal reasons, but will be glad to give information and personal assistance to any physician who desires to move in. Write to Dr. F. G. Vosica, Wilber, Neb.

In Alexandria, Neb., one of the members of a partnership is to be away for several months and an assistant is wanted, at a salary of \$100 a month (plus board, if he is single) for that period. The work is general practice, including obstetrics, with special emphasis on physical therapy, chemotherapy, proctology and chronic diseases.

A Journal for the Mississippi Valley Medical Society

THE periodical, hitherto known as the *Radiological Review* and *Chicago Medical Recorder*, will hereafter be the *Radiological Review* and *Mississippi Valley Medical Journal* and will be the official organ of the M. V. M. S. Dr. Harold Swanberg will continue as editor, with an editorial board selected from the Society.

College of Physicians to Meet

THOSE who are fellows or associates of the American College of Physicians, are reminded that the 1936 meeting will be held in Detroit, Mich., March 2 to 6, inclusive. If hotel reservations have not been made, it is high time to do so. Any who are eligible for fellowship in the College should write to the Executive Secretary, Mr. E. R. Loveland, 133-35 So. 36th St., Philadelphia, Pa., for complete information about the requirements.

